PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT,

FOR THE

MONTH OF SEPTEMBER

1872.

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364	*The Government of India* furnished with a copy of the above.	25th Sept. No. 2,277.	....	Ditto.	3748
365&366	*Statement* furnished by the Consulting Engineer showing the Capital Account of the Railway Companies of the Madras Presidency brought down to the 30th June 1872, ordered to be forwarded to the Home Government.	25th Sept. No. 2,278.	....	21st Aug. 1872, Nos. 352—354.	Ibid
367	*The Home Government* furnished with the above.	25th Sept. No. 2,279.	....	Ditto.	3749
368&369	*Standard dimensions for Indian Railways.*—Circular from the Government of India requesting certain information respecting the —, communicated to the Consulting Engineer for report.	26th Sept. No. 2,280.	....	20th Aug. 1872, Nos. 339, 340.	Ibid

1 Index numbers of the Proceedings.	2 Subjects	3 Dates of Proceedings.	4 Date of report to Secretary of State for India.	5 Numbers and dates of previous Proceedings.	6 Page
		1872.			
370—373	*Lawrence Asylum Buildings at Ootacamund.*— Passing orders on letters from Colonel Walker, Lieutenant-Colonel Farewell and Mr. Chisholm exculpating themselves of all blame in connection with the —.	26th Sept. No. 2,281.	....	5th June 1866, Nos. 67—69. 27th June 1867, Nos. 392—395. 21st Aug. 1867, Nos. 482—485. 18th Nov. 1867, Nos. 339, 340. 17th March 1868, Nos. 359—361. 23rd May 1868, Nos. 599, 600. 26th June 1868, Nos. 641, 642. 3rd July 1868, Nos. 75, 76. 7th July 1868, Nos. 156, 157. 19th Aug. 1868, Nos. 389, 390. 30th July 1869, No. 760. 3rd Nov. 1869, Nos. 46, 47. 11th Jan. 1870, Nos. 261, 262. 30th March 1870, Nos. 482—485. 8th Aug. 1870, Nos. 118—121.	3751
374	*The Government of India* addressed on the above subject.	26th Sept. No. 2,282.	....	Ditto.	3764
375&376	*Flood in Orissa.*—Letter from the Secretary to the Government of Bengal forwarding copy of a report by the Superintending Engineer, Orissa Circle, on the great floods of July last, and requesting to convey to the officers and men of the 41st Regiment Madras Native Infantry the Lieutenant-Governors high appreciation of their services rendered on the occasion, communicated to the Military Department with instructions.	26th Sept. No. 2,283.	....	....	3766
377&378	*Shed at Tiroomungalum.*—Estimate of Rupees 120 for improving the — for the accommodation of the Overseer, sanctioned.	26th Sept. No. 2,284.	....	23rd Jan. 1872, No. 1-3, Mis.	3767
379&380	*Madras Railway.*— Passing orders on the Inspection Report of the North-West Line of the —.	26th Sept. No. 2,285.	....	8th Dec. 1870, Nos. 155, 156. 26th Feb. 1872, Nos. 411, 412. 25th June 1872, Nos. 372, 373. 28th Aug. 1872, Nos. 481, 482.	3768

1 Index numbers of the Proceedings.	2 Subjects.	3 Dates of Proceedings.	4 Date of report to Secretary of State for India.	5 Numbers and dates of previous Proceedings.	6 Page
		1872.			
381&382	*Teroomala Naick's Palace at Madura.*—Passing orders on letter from the Superintending Engineer of the 8th Division offering explanations with reference to G. O. No. 1,839 of 1872, regarding the restoration of—.	26th Sept. No. 2,286.	....	13th April 1871, Nos. 112, 113. 24th April 1871, Nos. 359, 360. 26th June 1872, Nos. 433—435. 9th Aug. 1871, Nos. 81, 82. 15th June 1872, Nos. 254, 255. 5th Aug. 1872, Nos. 50, 51. 8th Aug. 1872, Nos. 108—110.	3769
383&384	*Mr. Sub-Engineer Hall.*—Report from the Superintending Engineer, 6th Division, of the satisfactory manner in which — conducted the duties of No. 4 Range, Tanjore, recorded; a further report awaited.	27th Sept. No. 2,287.	....	7th Dec. 1871, Nos. 123, 130.	3771
385—387	*Engine and Machinery.*—Cost of —for punkah pulling purchased from Mr. Orr to be defrayed from allotment for Tools and Plant; further orders to be passed on receipt of plan and estimate for a detached shed from which to work the machinery.	27th Sept. No. 2,288.	....	16th Aug. 1872, No. 165, Mis. 9th Sept. 1872, No. 65, Mis.	3772
388&389	*Meeting (Railway).*—Minutes of— held on the 6th August 1872, approved with remarks.	27th Sept. No. 2,289.	....	Ditto.	3773
389A389D	*Bellary Station.*—Passing orders on letters from the Consulting Engineer regarding the tenor of the Agent's letter in connection with the works at the — of the Madras Railway.	27th Sept. No. 2,289A.	....	11th June 1856, No. 178. 17th Nov. 1856, No. 394. 8th June 1872, Nos. 110—112. 2nd Aug. 1872, Nos. 26—28.	3776
390	*Budget grant.*—Application for a re-appropriation of the—.	27th Sept. No. 2,290.	....	19th Aug. 1872, Nos. 303, 304. 27th Aug. 1872, Nos. 433—434. 27th Aug. 1872, Nos. 458—459. 27th Aug. 1872, No. 233, Mis. 2nd Sept. 1872, Nos. 5—7.	3782
391	*Do.*— Do. do. do.	27th Sept. No. 2,291.	....	26th July 1872, Nos. 411, 412.	3784
392&393	*Establishment.*—The Superintending Engineer of the 8th Division informed of the — to be allowed to Sub-Divisional Officers on the re organization of the Public Works Department in December next, and directed to submit the next quarterly statement with the distribution of the charges of the officers and subordinates.	30th Sept. No. 2,292.	....	1st July 1872, Nos. 13—40. 5th July 1872, Nos. 122, 123. 1st Aug. 1872, Nos. 6, 7. 12th Aug. 1872, Nos. 191, 192.	3785

1 Index numbers of the Proceedings.	2 Subjects.	3 Dates of Proceedings.	4 Date of report to Secretary of State for India.	5 Numbers and dates of previous Proceedings.	6 Page
		1872.			
394&395	*Mr. Executive Engineer Walch.*—Report of — having passed the colloquial test in Telugu, communicated to the Controller of Public Works Accounts.	30th Sept. No. 2,293.	....	....	3786
396&397	*Traffic Returns.*—Explanation submitted by the Consulting Engineer of the cause of the delay in the submission of the audited — of the Madras Railway for the period ended the 3rd August 1872, recorded.	30th Sept. No. 2,294.	....	30th Sept. 1872, Nos. 288, 289.	3787
398&399	*Cooling of Railway Carriages.*—Letter from the Government of India requesting to be furnished with details as to the manner in which kus-kus tatties are used for —, communicated to the Consulting Engineer with instructions.	30th Aug. No. 3,295.	....	24th Aug. 1872, Nos. 403—405.	3788
400&401	*Railway Station at Veerinjeepuram, South-West Line, Madras Railway.*—Letter from the Government of India sanctioning the proposal to charge to Capital the cost of replacing by a permanent structure the temporary —, communicated to the Consulting Engineer.	30th Sept. No. 2,296.	....	22nd Aug. 1872, Nos. 374—376.	Ibid
402&403	*Serjeant Heinig.*— Resolved that the Mysore Government be informed that there is no objection to the permanent transfer of — to the Mysore Public Works Department.	30th Sept. No. 2,297.	....	6th May 1872, Nos. 105—107.	3789
404	*The Chief Commissioner of Mysore* informed accordingly.	30th Sept. No. 2,298.	....	Ditto.	Ibid
405&406	*Approximate Traffic Returns.*—Proposal of Consulting Engineer to forward direct to the Government of India the — of Railways in this Presidency, approved.	30th Sept. No. 2,299.	....	8th Aug. 1872, Nos. 115—116.	3790
407	*The Government of India* furnished with the above.	30th Sept. No. 2,300.	....	Ditto.	Ibid
408&409	*Madras Irrigation and Canal Company.*—Docket from the Government of India forwarding, with remarks, copy of Resolution in the Financial Department on the subject of the probable deficit in the revenue of the — for 1872-73, and proposals to meet it, communicated to the officers concerned with instructions.	30th Sept. No. 2,301.	....	25th July 1872, Nos. 387, 388. 30th Aug. 1872, Nos. 510—513.	3791

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PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MATTERS OF ROUTINE,

FOR THE MONTH OF SEPTEMBER 1872.

GOVERNMENT OF MADRAS.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
1	*Mr. Chisholm, Consulting Architect,* requested to furnish a memorandum of important public buildings under construction from his designs, and of plans that have been furnished by him during the last official year.	2nd Sept. 1872.	31st Jan. 1872, Nos. 618—620. 3rd Sept. 1872, Nos. 26, 27.
2	*Railway.*—The Consulting Engineer furnished with copies of letters from the Directors of the Madras Railway Company to their Agent at this Presidency.	2nd do. do.	....
3	*Transfers of Overseers.*—The Superintending Engineer of the 6th Division informed that the sanction of Government is not required to —.	2nd do. do.	....
4	*Lieutenant-Colonel Mayne and Captain Pennycuick.*—The Superintending Engineer of the 5th Division furnished with letters regarding the censure lately conveyed to —, and requested to furnish those officers with records relating to the Bangalore bakery and report upon the matter.	2nd do. do.	22nd July 1872, No. 333. 26th July 1872, Nos. 213, 214, Mis.
5	*Croom, Mr., Contractor.*—Appeals from — relative to the works he executed in the Chingleput District.	2nd do. do.	22nd June 1872, No. 160, Mis.
	Recorded.		
6	*Timber and planks.*—Proceedings in the Revenue Department on a letter from the Government of India requesting the early submission of the further reports on the seasoning of —, communicated to the Superintending Engineer of the 3rd Division.	2nd do. do.	6th Dec. 1871, No. 23, Mis. 4th April 1872, No. 23, Mis.
7	*Office of Canvasser.*—The Consulting Engineer for Railways to furnish further information regarding his proposal for the establishing of —.	2nd do. do.	10th July 1872, Nos. 171, 172.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
8	*Railway Stations.*—Letter from the Controller relating to the manner of dealing with the charge for preparing survey plans of land around the — of the Madras Presidency. Recorded.	2nd Sept. 1872.	10th July 1871, No. 71, Mis. 5th Mar. 1872, No. 45, Mis. 27th Aug. 1872, No. 250, Mis.
9	*Telegraph messages.*—Orders by the Government of India relative to — being marked *via Teheran* when sent out of India. Recorded.	2nd do. do.	....
10	*Administration Report.*—Copies of — of the Public Works Department, Bombay Presidency, for 1871-72. Lodged.	2nd do. do.	....
11	*Annual Progress Report.*—Copies of — of the Mysore Public Works Department for 1871-72. Lodged.	2nd do. do.	....
12	*Cheque Books.*—A supply of — forwarded to the Treasury Deputy Collector of Bellary.	2nd do. do.	....
13	*Bridges over Main Canals.*—Letter from the Government of India forwarding, with a circular of instructions, copies of a plan of ramps and road approaches of —. Recorded.	2nd do. do.	....
13A	*Jackson, Conductor.*—The Adjutant-General informed that there is no objection to the transfer of — to the Public Works Department.	2nd do. do.	2nd Aug. 1872, Nos. 29, 30.
14	*Railway.*—The Consulting Engineer requested to hasten the submission of the review of the Revenue Account of the Madras Railway for the 2nd half of 1871.	3rd do. do.	1st Aug. 1872, No. 1, Mis.
15	*Clock in St. Andrew's Church, Presidency.*—The Controller informed of the manner in which the charge for the repair of — should be dealt with.	3rd do. do.	6th June 1872, Nos. 64, 65.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
16	*Relief Works.*—Proceedings in the Revenue Department intimating that the — in the Godavery District should not be continued when the necessity for them no longer exists, communicated to the Superintending Engineer of the 1st Division.	3rd Sept. 1872.	....
17	*Latrines at Taluq Cutcherries.*—Passing orders on Proceedings in the Judicial Department on a letter from the Collector of Coimbatore complaining of the style of —.	3rd do. do.	7th May 1872, No. 45, Mis.
18	*Railway.*—Proceedings in the Judicial Department relative to the exemption of certain officers of the Madras Railway Company from serving as Jurors in the High Court, communicated to the Consulting Engineer.	3rd do. do.	....
19	*Schools.*—Proceedings in the Educational Department sanctioning estimates for the repair, etc., of Brennen's Zillah School at Tellicherry and the Normal School at Calicut, communicated to the Superintending Engineer of the 7th Division.	3rd do. do.	....
20	*Cuddapah Municipality.*—Proceedings in the Financial Department approving of the revised estimate for — for 1872-73, communicated with instructions to the Superintending Engineer of the 3rd Division.	3rd do. do.	8th May 1872, No. 53, Mis.
21	*Road.*—Proceedings in the Financial Department sanctioning an estimate for metalling a section of — from Palamcottah to Trichendoor in the Tinnevelly District, communicated to the Superintending Engineer of the 8th Division.	3rd do. do.	....
22	*Do.*—Do. for completing the road from Ponneri to Pulicat in the Chinglepnt District, communicated to the Superintending Engineer of the 4th Division.	3rd do. do.	31st Oct. 1867, No. 2,567, Revenue Dept.
23	*Sanitarium near Vizagapatam.*—Passing orders on Proceedings in the Public Department on a proposal for the establishing of —.	3rd do. do.	....
24	*Chepauk Park.*—Proceedings in the Public Department on the statements of the receipts and disbursements, etc., of — for the year ended 31st March 1872, communicated to the Superintending Engineer of the 4th Division.	3rd do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
25	*Light on Hare Island.*—Proceedings in the Marine Department sanctioning an estimate for work connected with — near Tuticorin, communicated to the Superintending Engineer of the 8th Division.	3rd Sept. 1872.	....
26	*Incomplete works.*—Do. granting funds for the completion of — which were left unfinished at the close of last official year, communicated to the Superintending Engineer of the 7th Division.	3rd do. do.	....
27	*Revenue Board Office.*—The Superintending Engineer of the 4th Division to proceed with the erection of bath-rooms and stairs and the provision of the sun-shades required at — at Chepauk, and to report whether he can provide funds for the work.	3rd do. do.	....
28	*Railway.*—Copy of a letter from the Directors of the Great Southern of India Railway Company to their Agent at Negapatam, forwarded to the Consulting Engineer for Railways.	4th do. do.	....
29	*Do.*—Do. Carnatic do.	4th do. do.	....
30	*Do.*—The Consulting Engineer furnished with statements of Appropriations and Issues of the Madras Railway for the half-year ended 30th June 1872.	4th do. do.	....
31	*Do.*—Report of an accident to a Watchman on the Madras Railway on the 22nd July last. Recorded.	4th do. do.	....
32	*Berlie, Mr. Supervisor.*—Letter from the Superintending Engineer of the 8th Division relative to the steps taken in connection with the transfer of — from the 2nd Division. Lodged.	4th do. do.	16th Aug. 1872, No. 160, Mis.
33	*Public Works Administration Report.*—Memorandum from the Chief Secretary's Department requesting the early submission of — for 1871-72. Lodged.	4th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
34	*Railway.*—Circular from the Government of India forwarding type sketches of tanks of iron and of brick or stone carried on brick or stone wells or buildings, communicated to the Consulting Engineer for Railways.	4th Sept. 1872.	4th Sept. 1872, No. 35, Mis.
35	*Do.*—Circular from the Government of India forwarding type sketch of permanent-way with rail weighing 20 kilograms per metre run without shoes, communicated to the Consulting Engineer for Railways.	4th do. do.	10th Sept. 1872, No. 77, Mis.
36	*Police Station-house.*—Proceedings in the Judicial Department sanctioning an estimate for the repair of — at Oboolapooram in the Chingleput District, communicated to the Consulting Engineer for Railways.	4th do. do.	....
37	*Promotions.*—Certain — on the Engineering Establishment of the Public Works Department. Notified.	4th do. do.	....
38	*Unadjusted advances.*—Proceedings of the Board of Revenue on the statement of — in the accounts of Public Works Range Officers for the quarter ended 31st December 1871. Recorded.	4th do. do.	....
39	*Jackson, Conductor.*—The appointment of — as a Sub-Engineer of the 3rd grade. Notified.	4th do. do.	2nd Sept. 1872, No. 13A
40	*Lithographic Department.*—Instructions to the Superintending Engineer of the 4th Division relative to the collection of the amounts due for work done by — for other departments.	5th do. do.	2nd Nov. 1867, Nos. 40, 41. 11th July 1872, No. 111, Mis.
41 & 42	*Irrigation Works and Canals.*—The Government of India furnished with the sketch map of — in progress, etc., in the Madras Presidency.	5th do. do.	13th Oct. 1871, Nos. 204—208.
43	*Mr. Vigor and Gunner Cope, Overseers.*—Embarkation certificates furnished for — for their passage to Cocanada per *Arabia*.	5th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
44	*Railway.*—The Consulting Engineer directed to furnish, without delay, the information required by the Government of India as to the steps to be taken for fixing the limit to the Capital locked up in stores by the Guaranteed Railway Companies of the Madras Presidency.	6th Sept. 1872.	22nd July 1872, No. 184, Mis.
45	*New Goodaloor Ghaut.*—Letter from the Superintending Engineer of the 8th Division inviting attention to correspondence relative to the construction of — in the Madura District. Lodged.	6th do. do.	14th May 1872, Nos. 436, 437. 15th Aug. 1872, No. 155, Mis.
46	*Railway.*—Letter submitted by the Consulting Engineer regarding the crippled state of the Madras Railway Audit Department in consequence of dengue fever. Recorded.	6th do. do.	....
47	*Surveys and Estimates.*—Proceedings in the Financial Department ordering the return of certain — to the Superintending Engineer of the 7th Division. Lodged.	6th do. do.	....
48	*Bennett, Corporal.*—Letter from the Master Attendant, Madras, forwarding a passage ticket for — to proceed to Vizagapatam. Lodged.	6th do. do.	....
49	*Plan of latrine* to be constructed in the compound of the Salem Court-house, forwarded to the Superintending Engineer of the 5th Division.	6th do. do.	23rd April 1872, No. 233, Mis.
50	*Confidential Report.*—Proceedings in the Military Department forwarding sketches to accompany the — by Captain Kerrick. Lodged.	6th do. do.	26th Aug. 1872, No. 242, Mis.
51	*Vyapoory Pillay, Supervisor.*—Report of the arrival of — at Palghaut. Lodged.	6th do. do.	....
52	*Vernacular Examination.*—Letter from the Superintending Engineer of the 4th Division stating that none of the officers in the division are desirous of presenting themselves for — of the 7th October next. Lodged.	6th do. do.	29th Aug. 1872, No. 263, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
53	*Estimate of Stores required from England.*—Telegram from the Government of India requesting the early submission of — for 1873-74. Lodged.	6th Sept. 1872.	14th Aug. 1872, Nos. 255, 256.
54	*Lieutenant-Colonel Goddard* to furnish further information regarding the allowances claimed for being in charge of the Public Works Store Department.	7th do. do.	....
55	*Unauthorized Outlay.*—Proceedings in the Financial Department regarding the — on certain works, communicated to the Controller of Public Works Accounts.	7th do. do.	1st Aug. 1872, No. 2, Mis.
56	*Tiroomalay Naick's Palace.*—Instructions issued regarding the putting up of a clock on the south-east corner of — in the Madura District.	7th do. do.	....
57	*Bridge across the Mahe river.*—Proceedings in the Financial Department sanctioning a plan and estimate for the re-construction of — on the road between Calicut and Cannanore, communicated to the Superintending Engineer of the 7th Division.	7th do. do.	....
58	*Modification in accounts.*—The Controller furnished with the Chief Engineer's opinion on the proposal to dispense with entries of the sub-heads of estimates for Minor Works and Repairs not exceeding Rupees 2,500 each.	7th do. do.	....
59	*Female Hospital at Bangalore.*—Instructions relative to the estimate for improving the upper storey of — for the protection of children.	7th do. do.	....
60	*Railway.*—Letter from the Consulting Engineer requesting orders on the lists of establishments of the Great Southern of India Railway for the half-year ending 31st December 1872. Lodged.	7th do. do.	25th July 1872, Nos. 384—386. 28th Aug. 1872, Nos. 464, 465.
61	*The Commissary General* furnished with a copy of the Public Works Code.	9th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
62	*Vernacular Examination of the 7th October next.*—Report from the 2nd Division regarding officers for —. Lodged.	9th Sept. 1872.	29th Aug. 1872, No. 263, Mis.
63	*Do.*—Do. 5th Division do.	9th do. do.	Ditto.
64	*Armourers' Shop.*—Estimate for the construction of — for the Native Infantry Regiment at Perambore, returned for correction.	9th do. do.	....
65	*Funds.*—A report requested as to whether Rupees 3,000 can be spared from the Imperial grant under Tools and Plant for the Store Department to meet outlay for the purchase of Mr. Orr's engine, etc., for the pulling of punkahs at the General Hospital.	9th do. do.	16th Aug. 1872, No. 165, Mis.
66	*European Sentry's walk.*—Estimate for — at the guard of the Grand Magazine, Trichinopoly, returned for re-consideration with reference to remarks by the Chief Engineer.	9th do. do.	14th June 1872, No. 132, Mis.
67	*Warrant Non-Commissioned Officers.*—The Superintending Engineers to submit nominal rolls of — serving in the Public Works Department, and who originally enlisted for the late Madras Artillery.	9th do. do.	20th Aug. 1872, No. 194, Mis.
68	*Jackson, Conductor.*—The services of —, Sub-Engineer, to be at the disposal of the Executive Engineer, Bellary Range, till further orders.	9th do. do.	4th Sept. 1872, No. 39, Mis.
69	*Grading of Overseers.*—Remarks relative to the delay in the submission of the list of the 3rd Division for —.	9th do. do.	28th Aug. 1872, Nos. 491, 492.
70	*Do.*—Do. on the subject of—, forwarded to the Superintending Engineers.	9th do. do.	Ditto.
71	*Sick Horse Lines for the Royal Artillery at Bellary.*—Remarks by the Chief Engineer on the plan and estimate prepared by Mr. Fraser for —.	9th do. do.	18th Dec. 1866, Nos. 249, 250.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
72	*Kadri Taluq Cutcherry.*—The Superintending Engineer of the 3rd Division to furnish documents and further information relative to the Contractor's claim in connection with —.	9th Sept. 1872.	10th July 1868, Nos. 246, 247. 12th July 1869, Nos. 285, 286.
73	*R. Mootiah Pillay.*—The Superintending Engineer of the 8th Division furnished with the petition of — with a view to his services being verified.	9th do. do.	....
74	*Railway.*—The Consulting Engineer to expedite the submission of the information required by the Government of India relative to the dates on which the approximate traffic returns of the Madras Railways can be furnished.	9th do. do.	8th Aug. 1872, Nos. 115, 116.
75	*Godavery Eastern Delta Range Accounts.*—Statement showing the delay in the submission of — for July 1872. Recorded.	10th do. do.	....
76	*Donaghue, Mr. Supervisor.*—Suggestion for the grant of casual leave to —.	10th do. do.	....
77	*Outside Cylinder Tank Engine.*—Government of India Circular forwarding a type sketch of —, class A. for the metre gauge, communicated to the Consulting Engineer for Railways.	10th do. do.	4th Sept. 1872, No. 35, Mis. 8th Aug. 1872, No. 84.
78	*Relief works in the Vizagapatam District* to be discontinued from the 31st July and a statement of the outlay on them ordered to be submitted.	10th do. do.	....
79	*Road.*—Proceedings in the Financial Department sanctioning revised estimates for the construction of — between Bezwada and Hyderabad in the Masulipatam Circle, communicated to the Superintending Engineer of the 2nd Division.	10th do. do.	....
80	*Civil Debtors' Jail.*—Proceedings in the Financial Department sanctioning an estimate for the construction of a bath-room for the use of the Jail Keeper, communicated to the Superintending Engineer of the 4th Division.	10th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
81	*Roman Catholic Chapel, Trichinopoly.*—Proceedings in the Ecclesiastical Department sanctioning a grant for the improvment of the —, communcated to the Superintending Engineer of the 6th Division.	10th Sept. 1872.	....
82	*European Infantry at Bellary.*—The Superintending Engineer of the 3rd Division directed to submit, for inclusion in the Budget of 1873-74, the plans and estimates for the barrack accommodation required for —.	10th do. do.	....
83	*Nominal list of men of D. Brigade, Royal Horse Artillery,* who are volunteers for transfer to that remaining in India, forwarded to the Officer Commanding the Brigade.	11th do. do.	29th July 1872, No. 220, Mis.
84	*Stations.*—Consulting Physician's report on the sanitary state of the stations on the North-West, South-West, and Bangalore Branch lines of the Madras Railway. Recorded.	12th do. do.	....
85	*Mr. Assistant Engineer Pringle, Mangalore Range.*—Privilege leave for fifteen days granted to —. Notified.	12th do. do.	....
86	*Fatal Accident.*—Report of — to a man on the 26th August on the Madras Railway, recorded.	12th do. do.	....
87	*Vernacular Examination.*—Report of no officers in the 3rd Division for — to be held on the 7th October. Lodged.	12th do. do.	29th Aug. 1872, No. 263, Mis.
88	*Seasoning Timber and Planks.*—Proceedings in the Revenue Department on reports from Public Works Officers on the subject of —, recorded. Recorded.	12th do. do.	6th Dec. 1871, No. 23, Mis. 26th Mar. 1872, No. 231, Mis.
89	*Postage.*—Letter from the Postmaster, Madras, remitting the amount erroneously charged by the Post Office at Bangalore on a service cover to the address of the Secretary to Government, Public Works Department. Lodged.	12th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
90	*Railway Revenue Accounts.*—Letter from the Government of India intimating that detailed comparative abstracts of Railway Revenue Accounts will be found published in the Supplement to the *Gazette of India*, communicated to the Consulting Engineer for Railways.	12th Sept. 1872.	13th Aug. 1872, Nos. 218—220.
91	*Unanswered Reference Lists.*—Permission granted for the omission of G. O., No. 846 of 1872, from future — of the Superintending Engineer of the 5th Division.	12th do. do.	....
92	*Madras Railway.*—Proceedings in the Judicial Department issuing instructions for the early payment of the amount due by the Superintendent of Police, Cuddapah, to the Madras Railway Company, communicated to the Consulting Engineer.	12th do. do.	20th Aug. 1872, Nos. 324, 325.
93	*Bahoor tank in the South Arcot District.*—Proceedings in the Revenue Department communicating copy of Order in the Political Department sanctioning the convention between the French and English Governments regarding the distribution of the water of the —, communicated to the Superintending Engineer of the 5th Division.	12th do. do.	....
94	*Quarters for Jailor.*—Proceedings in the Judicial Department sanctioning plan and estimate for converting part of the Debtors' Prison at Ootacamund into —, communicated to the Superintending Engineer of the 7th Division.	12th do. do.	9th July 1872, No. 96, Mis.
95	*Tumkum Bungalow.*—Proceedings in the Revenue Department declining the application for the use by the Survey Department of the — in the Madura District, and requesting the Public Works Department to expedite the submission of plans and estimates called for in connection with it —, communicated to the Superintending Engineer of the 8th Division with instructions.	12th do. do.	24th Feb. 1871, No. 93, Mis.
96	*Local Fund Maistries.*—Proceedings in the Financial Department sanctioning the employment of two additional — in No. 4 Range, Godavery District, communicated to the Superintending Engineer of the 1st Division.	12th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
97	*Appointments.*—Proceedings in the Financial Department, communicating Resolution of the Government of India regarding the power of local Governments to create new — or sanction additions to existing salaries, recorded.	12th Sept. 1872.	....
98	*Road from Juggannaickpooram to Kotipilly.*—Proceedings in the Financial Department sanctioning revised estimate for metalling and gravelling the —, communicated to the Superintending Engineer of the 1st Division.	12th do. do.	....
99	*Survey of land near Railway Stations.*—Proceedings in the Revenue Department stating the nature of the — required, communicated to the Superintending Engineers concerned.	12th do. do.	5th Mar. 1872, No. 45, Mis.
100	*Correspondence.*—The Consulting Engineer furnished with a copy of letter from the Directors of the Carnatic Railway Company to their Agent at this Presidency.	12th do. do.	....
101	*Upper Godavery Works.*—Passing orders on docket from the Government of India forwarding copy of letter requesting the early reduction of the medical staff employed on the —.	12th do. do.	16th Aug. 1872, Nos. 285, 286. 24th Aug. 1872, No. 241, Mis.
102	*The Government of India* addressed on the above subject.	12th do. do.	Ditto.
103	*Flagstaff at Poondy.*—Proceedings in the Marine department sanctioning plan and estimate for repairing the —, communicated to the Superintendng Engineer of the 1st Division with remark.	13th do. do.	....
104	*Conductor Jackson.*—Letter from Commandant Sappers and Miners, inquiring the district to which — has been appointed and the officer to whom he is to report himself. Lodged.	13th do. do.	4th Sept. 1872, No. 39, Mis. 9th Sept. 1872, No. 68, Mis.
105	*Irrigation Map.*—Telegram from the Government of India requesting that the submission of certain — may be expedited. Lodged.	13th do. do.	13th Oct. 1871, Nos. 204—208. 5th Sept. 1872, No. 41, 42, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
106	*Vernacular Examination.*—Report of no officers for — in the 6th Division. Lodged.	13th Sept. 1872.	29th Aug. 1872, No. 263, Mis.
107	*Do. do.*—Do. do. in the Wynaad ... ... Lodged.	13th do. do.	29th Aug. 1872, No. 263, Mis.
108	*Sub-Engineer Balasoondrum Moodelly's* leave for one month. Notified.	13th do. do.	1st July 1872, Nos. 13—40.
109	*General Local Fund Budget Statements of* 1871-72.—Proceedings of the Board of Revenue submitting —. Recorded.	13th do. do.	....
110	*Seasoning Timber.*—Letter from Superintending Engineer, 3rd Division, reporting having replied to G. O., No. 23, of 6th December 1871, on the subject of —. Lodged.	13th do. do.	6th Dec. 1871, No. 23, Mis. 2nd Sept. 1872, No. 6, Mis. 12th Sept. 1872, No. 88, Mis.
111	*Accounts.*—Explanation of the delay in the submission of — of the Raidroog range to the Controller of Public Works Accounts. Recorded.	13th do. do.	12th Aug. 1872, Nos. 195, 196.
112	*Cancelled.*	13th do. do.	....
113	*Appropriation and Outlay Accounts for* 1871-72.—Letter from the Controller of Public Works Accounts explaining certain remarks in the —. Lodged.	13th do. do.	....
114	*Mr. Assistant Engineer Martin.*—Report of — having passed in Telugu, communicated to the officers concerned.	14th do. do.	7th Aug. 1872, No. 75, Mis.
115	*Unanswered Reference Lists.*—Permission granted for the omission of certain orders from future — of the Superintending Engineer of the 1st Division.	14th do. do.	....
116	*Saltroads in Kistna District.*—Proceedings of the Board of Revenue on Collector's report on the — during 1871-72, communicated to the Superintending Engineer of the 2nd Division.	14th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
117	*Church at Kotagherry.*—Proceedings in the Ecclesiastical Department sanctioning estimates, amounting to Rupees 380, for the repair of the —, and directing the Accountant-General to transfer the amount to the Public Works Department, communicated to the Superintending Engineer of the 7th Division.	14th Sept. 1872.	18th Jan. 1867, Nos. 346, 347.
118	*Lightning Conductor of St. George's Cathedral Tower.*—Proceedings in the Ecclesiastical Department directing that the grant-in-aid sanctioned towards the enlargement of the — be debited under "Petty Construction and Repairs" against "Provincial Services," communicated to the Superintending Engineer of the 4th Division.	14th do. do.	13th Aug. 1872, No 143, Eccl. Dept.
119	*Police huts in the Tanjore District.*—Proceedings in the Judicial Department sanctioning estimates for certain —, communicated to the Superintending Engineer of the 6th Division.	14th do. do.	....
120	*Telegraph line.*—Proceedings in the Political Department communicating observations of the Government of India deciding to abandon the — *via* Bezwara to Hyderabad on the completion of the line to the Nizam's Capital *via* Goolburga and Waddy, communicated to the Superintending Engineers of the 2nd and 3rd Divisions.	14th do. do.	18th May. 1872, Nos. 167, Mis.
121	*Accident.*—Report of an accident to a Coppersmith at the Perambore Works on the 15th August.	14th do. do.	....
	Recorded.		
122	*Madras Irrigation and Canal Company.*—Statement of expenditure on account of — for May 1872.	14th do. do.	7th Aug. 1872, No. 73, Mis.
	Lodged.		
123	*Correspondence.*—The Consulting Architect furnished with a copy of certain order.	16th do. do.	19th Aug. 1872, No. 190, Mis.
123A	*Rest-house Serjeant's quarters, etc., at Erode.*—Papers on the subject of the insalubrity of the — referred to the Financial Department with remarks.	16th do. do.	30th Aug. 1872, No. 270, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
124	*Railway.*—Passing orders on letters submitted by the Consulting Engineer relative to the theft of wire-fencing belonging to the Great Southern of India Railway Company.	17th Sept. 1872.	13th May 1871, Nos. 243, 244. 29th May 1871, Nos. 489, 490. 1st June 1871, Nos. 22, 23. 21st June 1871, Nos. 385, 386. 1st Sept. 1871, Nos. 1, 2. 4th Sept. 1871, Nos. 40, 41. 19th Oct. 1871, Nos. 310, 311.
125	*Wynaad Unanswered Reference List.*—Permission granted for the omission of certain orders from —.	17th do. do.	13th Jan. 1870, No. 151.
126	*Railway.*—Circular from the Government of India forwarding type design of third-class carriage for the metre gauge railways, communicated with observations to the Consulting Engineer.	17th do. do.	15th Jan. 1872, No. 104, Mis. 4th Sept. 1872, No. 34, Mis.
127	*Unanswered Reference Lists.*—Permission granted for the omission of certain orders from future — of the Superintending Engineer of the 8th Division and instructions issued on the subject.	18th do. do.	....
128	*Railway Stations in the Dindigul Taluq.*—Instructions issued for meeting the cost of the temporary establishment for surveying the —.	18th do. do.	8th July 1872, No. 78, Mis. 27th Aug. 1872, No. 250, Mis.
129	*Regulations for the transport of troops.*—Orders issued for forwarding to the Consulting Engineer for Railways copies of the handbook of —.	18th do. do.	11th July 1872, No. 105, Mis. 23rd Aug. 1872, Nos. 231, 232, Mis.
130	*Vernacular Examination.*—Report of no Officers being prepared to pass the — in the 7th Division. Lodged.	18th do. do.	29th July 1872, No. 263, Mis.
131	*Correspondence.*—Letter from Major Kennedy stating the number of spare copies required for the future. Lodged.	18th do. do.	....
132	*Mr. Taluq Overseer Walton.*—Report of the transfer of — from the Trichinopoly to the Cuddapah District. Lodged.	18th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
133	*Vernacular Examination.*—Report of no Officers requiring to pass the — in the 1st Division. Lodged.	18th Sept. 1872.	29th Aug. 1872, No. 263, Mis.
134	*Embarkation Certificates.*—Letter from the Agent, B. I. S. N. Co., requesting — for Mr. Vigor and Gunner Cope per *Arabia* to Cocanada. Lodged.	18th do. do.	....
135	*Stores.*—Memorandum from the Government of India requesting an early reply to the reference on the subject of the prices of — purchased in the local markets and those procured from England. Lodged.	18th do. do.	8th Aug. 1872, Nos. 120—131.
136	*Suit.*—Papers submitted by Major Kennedy, having reference to the — instituted by Mr. Malcolm against Mr. Sub-Engineer Hasler for damages for injuries sustained owing to obstructions on the public road, forwarded for the opinion of the Government Pleader, and Major Kennedy requested to move the Court to postpone the hearing of the case.	19th do. do.	....
137	*Sub-Conductor Milne.*—Proceedings in the Educational Department sanctioning the continuance of the services of — as Instructor in Photography at the Civil Engineering College, communicated to the Controller of Public Works Accounts.	19th do. do.	22nd July 1872, No. 212, Educl. Dept.
138	*Police Stations in the Kistna District.*—Letter from the Inspector-General of Police reporting that instructions have been issued for the return of papers connected with the — to the Superintending Engineer, communicated to the Officer concerned.	20th do. do.	....
139	*Corporal J. Bennett.*—Duplicate certificate granted by the Principal of the Civil Engineering College to — as having qualified for Taluq Overseer. Lodged.	20th do. do.	....
140	*Carnatic Railway.*—Passing orders on letter from the Government of India requesting the traffic return of the — for the week ending 20th July 1872.	20th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
141	*The Government of India* informed of the despatch of the return on the 3rd instant and a spare copy furnished.	20th Sept. 1872.	....
142	*Statement*, submitted by the Controller of Public Works Accounts, of expenditure as compared with grants, Imperial Extraordinary and Ordinary, Provincial, and Local up to the end of May 1872. Lodged.	20th do. do.	....
143	*Correspondence.*—The Consulting Engineer furnished with a copy of letter from the Directors of the Carnatic Railway Company to their Agent at Madras.	20th do. do.	....
144	*Do.*—Do. do. Great Southern of India do. ...	20th do. do.	....
145 & 146	*Objectionable items (Imperial).*—Passing orders on statement of — in the accounts of the 1st Division for April 1872.	20th do. do.	....
147	*Do. (Provincial).*—Do. do.	20th do. do.	....
148 & 149	*Do. (Imperial).*—Do. do. 2nd Division do. ...	20th do. do.	....
150 & 151	*Do. (Imperial).*—Do. do. 3rd Division do. ...	20th do. do.	....
152	*Do. (Provincial).*—Do. do.	20th do. do.	....
153 & 154	*Do. (Imperial).*—Do. do. 6th Division do. ...	20th do. do.	....
155	*East Coast Canal Extension.*—The Government of India furnished with a copy of their letter relating to the —.	21st do. do.	....
156	*Coonoor Settlement Map.*—Letter from Superintendent, Revenue Survey, forwarding copies of —. Lodged.	21st do. do.	....
157	*Progress Report of the Mysore Public Works Department for* 1871-72.—Docket from the Chief Engineer, Mysore, forwarding copy of *errata* to be attached to the —. Lodged.	21st do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
158	*Correspondence*—Letter from the Consulting Engineer asking for a copy of certain order. Lodged.	21st Sept. 1872.	....
159	*Vernacular Examination.*—Report of no officers being desirous of passing the — to be held on the 7th October in the 8th Division and Mr. Executive Engineer Rundall's desire of being examined in the colloquial test. Lodged.	21st do. do.	12th April 1871, Nos. 91, 92. 29th Aug. 1872, No. 263, Mis.
160	*Monegar Choultry.*—Letter from the Superintending Engineer of the 4th Division reporting that certain alterations, etc., are required to the — for the accommodation of four East Indian nurses, and soliciting instructions on the subject. Lodged.	21st do. do.	5th Aug. 1872, No. 43, Mis. 24th Aug. 1872, No. 236, Mis.
161	*Veeraragavalu Naicker.*—Report of no individual by the name of — residing in Raichoti, Cuddapah District. Lodged.	21st do. do.	....
162	*Service under Local Funds Boards.*—Proceedings in the Financial Department relative to — being allowed to count towards pension, communicated to all Superintending Engineers.	23rd do. do.	....
163	*Railway.*—Proceedings in the Judicial Department on the explanation of the Magistrate of Bellary relative to the disposal of certain cases of cattle-trespass on the Madras Railway, communicated to the Consulting Engineer.	23rd do. do.	6th Aug. 1872, No. 59, Mis.
164	*Subsidiary Jails.*—Proceedings in the Judicial Department sanctioning plans and estimates for additions to — at Koraput and Gunapur in the Vizagapatam District, communicated to the Superintending Engineer of the 1st Division.	23rd do. do.	20th July 1868, Nos. 462, 463. 29th Sept. 1871, No. 249, Mis.
165	*Grants-in-aid from Provincial Funds.*—Proceedings in the Financial Department relative to the estimating of — for the purposes of the Local Fund Budget for 1873-74, communicated to all Superintending Engineers, etc.	23rd do. do.	20th June 1871, No. 133, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
166	*Tanjore District Jail.*—Proceedings in the Judicial Department sanctioning an estimate for providing tiled roofs to the thatched block of wards in —, communicated to the Superintending Engineer of the 6th Division.	23rd Sept. 1872.	10th May 1872, No. 68, Mis.
167	*Correspondence.*—The Government of India informed that its No. 952 of August last has not been received.	23rd do. do.	....
168	*Printed Reports.*—Letter from the Government of India regarding the number of copies of — that will be required in future. Lodged.	23rd do. do.	....
169	*R. E. Professional Papers.*—Proceedings in the Military Department forwarding copies of Vol. XX. of —. Lodged.	23rd do. do.	....
170	*Famine Relief Works.*—Letter from the Superintending Engineer of the 1st Division relative to advances made by Civil to Public Works Officers on account of — in the Vizagapatam District. Lodged.	23rd do. do.	17th July 1872, Nos. 284, 285.
171	*Railway.*—The Government of India informed of the receipt of 150 copies of the hand-book of regulations for the transport of troops by rail.	23rd do. do.	11th July 1872, No. 105, Mis.
172 & 173	*Office of Controller of Public Works Accounts.*—Passing orders on the report of Mr. Brock receiving charge of — from Captain Trail on the 17th instant.	23rd do. do.	24th June 1872, No. 176, Mis.
174	*Railway.*—Copy of Reports made to the Board of Trade upon certain Railway accidents which have occurred on Railways in the United Kingdom during January and February 1872, forwarded to the Consulting Engineer.	23rd do. do.	21st Aug. 1872, No. 206, Mis.
175	*Police Works.*—Proceedings in the Judicial Department sanctioning Rupees 314 for the completion of —, in the Jeypore country, communicated to the Superintending Engineer of the 1st Division.	24th do. do.	9th July 1872, Nos. 166, 167.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
176	*Assistant Apothecary Douglas.*—Proceedings in the Military Department regarding the grant of compensation for inferior quarters to — attached to the Gun Powder Manufactory, communicated to the Superintending Engineer of the 4th Division.	24th Sept. 1872.	12th Aug. 1872, No. 125, Mis.
177	*Seshamungalum Tank Channel.*—Proceedings in the Public Department relative to the acquisition, under Act X. of 1870, of the land required in the North Arcot District for the re-opening of —, communicated to the Superintending Engineer of the 4th Division.	24th do. do.	....
178	*Jungle Conservancy Fund Budget for* 1872-73.—Proceedings in the Revenue Department on —, communicated to the Superintending Engineers.	24th do. do.	....
179	*Railway.*—Copy of a letter from the Directors of the Carnatic Railway Company to their Agent at this Presidency, forwarded to the Consulting Engineer.	24th do. do.	....
180	*Losses of public money.*—Proceedings in the Financial Department relative to the reporting of — to the Government of India, communicated to the Superintending Engineers.	24th do. do.	....
181	*Newspapers or Periodicals.*—No officer to subscribe at the public expense to — without the special sanction of Government.	25th do. do.	....
182	*Postage.*—Letter from the Postmaster-General, Madras, stating that steps have been taken for the recovery of — charged on a cover to this office. Lodged.	25th do. do.	....
183	*Municipal Budgets.*—Proceedings in the Financial Department intimating that copies of — will be furnished for transmission to the Government of India. Recorded.	25th do. do.	26th Aug. 1872, Nos. 418, 419.
184	*Railway.*—Schedule of the Proceedings of the Consulting Engineer from 1st to 15th July 1872. Lodged.	25th do. do.	....

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
185	*Correspondence.*—Spare copies of certain orders supplied to the Examiner of Railway Accounts.	25th Sept. 1872.	22nd Aug. 1872, No. 1,999.
186	*Wybrow, Mr. Assistant Engineer.*—Report of the fitness of — for the charge of a range. Lodged.	25th do. do.	16th Oct. 1867, Nos. 306, 307.
187	*Correspondence.*—Letter from the Superintending Engineer of the 2nd Division returning certain papers. Lodged.	25th do. do.	....
188	*Lunatic Asylum at Waltair.*—Passing orders on Proceedings in the Judicial Department on plans and estimates for additions, etc., to — in the Vizagapatam District.	25th do. do.	6th Nov. 1871, No. 28, Mis.
189	*Hoozoor Cutcherry.*—Proceedings in the Judicial Department sanctioning estimates for improvements to — and record-room at Salem, and for a new room for the Collector's press, communicated to the Superintending Engineer of the 5th Division.	25th do. do.	....
190	*Absentee pay.*—Proceedings in the Financial Department relative to — issued in England being debited to Imperial Revenues and that paid in India to Provincial Services, communicated to the Controller of Public Works Accounts.	25th do. do.	....
191	*Roman Catholic Church at Cannanore.*—Passing orders on Proceedings in the Ecclesiastical Department allotting funds for the completion of the left wing of — in the Malabar District.	25th do. do.	6th Mar. 187?, Nos. 125, 126.
192	*St. Andrew's Church at Bangalore.*—Proceedings in the Ecclesiastical Department sanctioning a grant for enclosing the ground in front of —, communicated to the Superintending Engineer of the 5th Division.	25th do. do.	....
193	*Railway.*—The Consulting Engineer furnished with a copy of the reports made to the Board of Trade on Railway accidents in the United Kingdom during March, April, and May 1872.	26th do. do.	23rd Sept. 1872, No. 174, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
194 & 195	*Thompkinson, Mr. D.*—Passing orders on the application for the grant of one year's furlough to —, Mechanical Engineer.	26th Sept. 1872.	....
196	*Subsidiary Jail at Dachepully.*—Proceedings in the Judicial Department sanctioning a further grant for the repair of — in the Kistna District, communicated to the Superintending Engineer of the 2nd Division.	26th do. do.	8th Aug. 1872, No. 87, Mis.
197	*Cemeteries in the Chingleput District.*—The Superintending Engineer of the 4th Division instructed to arrange for the repair of — from provincial funds.	26th do. do.	....
198	*Old Burial-ground.*—The Superintending Engineer of the 4th Division instructed to arrange for the repair of — in the Fort of Arnee, North Arcot District.	26th do. do.	....
199	*Coonoor Church.*—Proceedings in the Ecclesiastical Department sanctioning an estimate for certain repairs to —, communicated to the Superintending Engineer of the 7th Division.	26th do. do.	....
200	*Building at Morapaud.*—Proceedings in the Judicial Department sanctioning an estimate for the repair of — occupied by the Sub-Registrar and Police in the Tinnevelly District, communicated to the Superintending Engineer of the 8th Division.	26th do. do.	....
201	*Cemetery at Nellore.*—The Superintending Engineer to arrange for the construction of a corpse gate at —.	26th do. do.	4th Mar. 1870, No. 31, Mis. 12th Aug. 1872, No. 124, Mis.
202	*Principal of the Civil Engineering College.*—Major Rogers to act as — during the absence on furlough of Major Edgcome.	26th do. do.	....
203	*Donaghue, Mr. Supervisor,* granted two days' leave without pay.	30th do. do.	10th Sept. 1872, No. 76, Mis.

No.	Subject and Order.	Date of Order.	Dates of previous Orders.
204	*Correspondence.*—Letter from the Superintending Engineer of the 2nd Division forwarding letters quoted in a report by the late Colonel Anderson. Lodged.	30th Sept. 1872.	12th Feb. 1864, No. 430.
205	*Southern Ports of Madras.*—Proceedings in the Marine Department on a letter from the Master Attendant, Madras, submitting an account of his recent tour to —. Lodged.	30th do. do.	....
206	*Goodaloor Ghaut.*—Instructions given by telegram for — being proceeded with.	30th do. do.	7th Sept. 1872, Nos. 45, Mis.
207	*Ramiah, Supervisor,* transferred from the North Arcot to the Chingleput District.	30th do. do.	15th Aug. 1872, Nos. 264—267.

PROCEEDINGS OF THE MADRAS GOVERNMENT,

PUBLIC WORKS DEPARTMENT.

For the month of September 1872.

No. 1. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 15th August 1872, No. 1,846:—

WITH reference to the last paragraph of G. O. No. 244, dated 29th May 1872, I have the honour, after communication with the Collectors of Ganjam, Vizagapatam, and Godavery Districts, to report that no redistribution of the grants provided in the current year's Budget for Taluq Cutcherries and Subsidiary Jails will be necessary.

No. 2. ORDER THEREON, 2nd September 1872, No. 2,080.

CIVIL WORKS, No. 1.

RECORDED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 3. Read the following letter from the Officiating Superintending Engineer, 2nd Division, to the Secretary to Government, Public Works Department, dated Camp at Doogarazpatam, 16th August 1872, No. 72:—

WITH reference to G. O. No. 970 of 13th April last, I have the honour to solicit early sanction for an extra grant* of Rupees 76 to enable me to arrange for the speedy repair of the Bezwara Post Office.

* For the repair of Postal buildings.

2. If funds are not available for this work, I would suggest the transfer of Rupees 76 from the Nellore to the Kistna District from the Rupees 200 assigned

for "Minor repairs to Postal and Telegraph buildings"—*vide* page 12 of the Public Works Imperial Budget for the current year.

No. 4. ORDER THEREON, 2nd September 1872, No. 2,081.

ACCOUNT, No. 1.

THE proposal in paragraph 2 is sanctioned.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following letters:—

No. 5. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 2nd August 1872, No. 1,892.

Two Comparative Statements.

I HAVE the honour to forward a Comparative Statement showing excess expenditure likely to be incurred on the verandahs of the north and south Barracks at St. Thomas' Mount.

2. The original estimate was prepared three years ago; at that period teak-wood could be procured at such a price as would allow of its being wrought and put up for Rupees 2-10-0, but the market price of wood has increased, and we cannot now procure it at the Mount for less than Rupees 3.

3. As the work is emergent, I have sanctioned Captain Hunter's continuing it in anticipation of sanction.

No. 6. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 17th August 1872, No. 2,142.

IN reply to your Memorandum No. 102 of 9th instant, I have the honour to report that partly owing to changes in my office and partly to sickness among the members of the establishment, the statement of cost of verandahs to north and south Barracks was lost sight of amid the pressure of examination of estimates for repairing cyclone damages.

2. Major Hunter brought the omission to my notice personally, and urged an early settlement of the point as the Military authorities were pressing the speedy execution of the work.

3. The expenditure to the end of July is Rupees 1,012-10-10, and Rupees 2,000 would probably be paid in August; but that on receipt of the above Memorandum I cancelled my permission to proceed with the work.

No. 7. ORDER THEREON, 2nd September 1872, No. 2,082.

MILITARY WORKS, No. 1.

UNDER the circumstances explained the Government sanction the excess of Rupees 1,464 over the original estimates for the reconstruction of the wooden verandahs in front of the north and south Barracks at St. Thomas' Mount. The estimate (Item 3 in the current year's Budget) will now stand at Rupees 7,724. The excess is provided from the unappropriated balance of the sum of Rupees 6,000 held at the disposal of Government in G. O. No. 2,037, dated 27th August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 8. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Camp at Kalkada, 11th August 1872, No. 1,046 :—

I HAVE the honour to report, for the information of Government, that while Local Fund Maistry C. Venoygum Moodelliar of Raidroog Taluq was proceeding, on the 25th January 1872, from the village of Goondlahulla towards Bellary for the purpose of "preparing a sketch of the proposed road from Raidroog to Cannacul," as reported by Mr. Supervisor Claridge, in charge of Raidroog Range, he was, at about 5-30 P. M., attacked by a gang of five dacoits, who, after having maltreated him and others with him, plundered them of their property, amongst which the following belonged to Government :—

	Probable value. RS.	A.	P.
1 Mathematical Instrument box, 2nd class...	25	12	0
1 Prismatic Compass ...	48	15	0
1 Measuring Tape, 50 feet ...	2	2	0
1 Saucer for mixing colours ...	0	3	0
Total...	77	0	0

The valuation of each article has been taken from the revised list of prices furnished by the General Superintendent, Public Works Stores and Workshops, Madras.

2. The Superintendent of Police reports that one of the gang, who was apprehended and tried by the Sessions Judge, was convicted and sentenced to five years' rigorous imprisonment. None of the property belonging to Government has been recovered; I therefore request permission to have the same written off.

No. 9. ORDER THEREON, 2nd September 1872, No. 2,083.

ACCOUNT, No. 2.

UNDER the circumstances reported the Government authorize the articles specified to be written off the list of "Tools and Plant."

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 10. Read the following Proceedings of the Government of India, Public Works Department, (Account—Railway), dated Simla, 16th August 1872, No. 1,073-A.R :—

DIRECTION to Consulting Engineers to furnish Examiners of Railway Accounts with copies of the quarterly and half-yearly lists of sanctions for works and maintenance, and also with advices of all appropriations made from the Minor Works Grant for Guaranteed Railways.

Read again :—

Public Works Department Resolution, No. 656-60-A. R., dated 10th May 1872.

Public Works Department Resolution, No. 830-5-A. R., dated 26th June 1872.

RESOLUTION.—To prevent any misunderstanding, the Government of India is pleased to direct that Consulting Engineers shall supply Examiners of Guaranteed Railway Accounts with copies of the quarterly and half-yearly lists of sanctions for works and maintenance prescribed by Public Works Department Resolution No. 656-60-A.R. of the 10th May last, and shall also advise Examiners of all appropriations made from the Minor Works Grant in the same way as each Local Government advises its Controller of similar appropriations from the Public Works Grant for minor works. It must be distinctly borne in mind that the sanction of the Government of India or of the Consulting Engineer to an estimate is no authority for incurring expenditure, unless the outlay likely to be incurred in the year is covered by an appropriation of funds. In cases where these requirements have not hitherto been attended to, early steps should be taken to have them carried out in their integrity.

The Government of Madras.
Do. of Bombay.
The Consulting Engineer, Calcutta.
Do. Lahore.
Do. Lucknow.
The Accountant General, P. W. D.

ORDER.—Ordered that this Resolution be communicated to the Local Governments and Officers marginally noted for information and guidance.

(Signed) P. O'CONNELL, Lieut.-Colonel, R.E.,
Offg. Deputy Secy. to Govt. of India.

No. 11. ORDER THEREON, 2nd September 1872, No. 2,084.

RAILWAY, No. 1.

COMMUNICATED to the Consulting Engineer for Railways and to the Examiner of Railway Accounts for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 12. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 14th August 1872, No. 427 :—

22nd December 1871,	No.	3,215.
26th February 1872,	,,	520.
23rd April ,,	,,	1,053.
29th May ,,	,,	1,348.
6th August ,,	,,	1,852.

WITH reference to the Orders of Government marginally noted, I have the honour to request that the Government of India may be moved to give more particular instructions as to the intention and scope of the half-yearly meetings directed to be held for the authorization of establishments, and as to the power of sanction vested in the Consulting Engineer for Railways at those meetings, as well as generally at other times.

2. I am unable to gather, from the instructions communicated with the Government Orders referred to above, whether the schedule of establishments which, under the orders of the Government of India, accompanies the Budget Estimate, or the list of proposed establishments as arranged at the half-yearly meetings, is intended to be henceforth the vehicle for application for increases of salary or for additional establishments, or whether these applications must, as heretofore, be separately submitted, neither can I gather whether any and if any what power of sanction is intended to be vested in the Consulting Engineer for Railways.

3. G. O. No. 3,215 of 22nd December 1871, merely directs that "Minutes of the official meetings for the purpose of authorizing establishments may be punctually submitted in the first month of each half-year;" and in the absence of any further orders, I should have concluded that the establishments as proposed at these meetings must provide for promotion and increase of salaries, and that the Consulting Engineer had the power of sanctioning the establishments for the half-year, submitting the same to Government for confirmation.

4. But G. Os. Nos. 520 and 1,348 of the 26th February and 29th May respectively, direct as follows :—

G. O. No. 520, paragraph 4.

1st.—That no higher pay than that drawn by the permanent incumbent of any office on the 1st January 1871 shall be passed after the 31st March 1872 without the sanction of the Government of India.

2nd.—That no increase to the strength of any establishment is to be sanctioned until the traffic or work to be performed shall have actually increased to such an extent as to make it absolutely essential. To which is added, in G. O. No. 1,053 of 23rd April 1872, paragraph 15, that in such cases the sanction of the Consulting Engineer shall be held to be necessary before any new appointments are made.

3rd.—That in preparing the lists for the half-year ending 31st December 1871, the existing establishments should be thoroughly investigated in relation to the present and past work, the present and past cost, and any probable increase of work, no increase being permitted without a reference to the Government of India.

G. O. No. 1,348.

5. The order as to the first of the above three points is clear and unmistakeable; but with regard to the second and third points, I am left in doubt as to whether or not I am empowered to sanction an increase of establishment in any case in which I am satisfied that increase of work has rendered it necessary. G. O. No. 520 of 26th February 1872, taken in connection with G. O. No. 3,215 of 22nd December 1871, and G. O. No. 1,053 of 23rd April 1872, paragraph 15, seems clearly to imply that I am so empowered, whilst G. O. No. 1,348 of 29th May 1872, seems to imply, equally clearly, that I am not so empowered. If it is intended that the proposed half-yearly establishment lists should, before being acted upon, receive the sanction of the Government of India, it will, I submit, be necessary to send these lists forward at least two months before the commencement of the half-year to which they relate.

No. 13. ORDER THEREON, 2nd September 1872, No. 2,085.

RAILWAY, No. 2.

ORDERED that this letter be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 14. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 2nd September 1872, No. 2,086.

RAILWAY, No. 3.

No. 602-E. R., 9th December 1871.
G. O. No. 3,215, dated 22nd December 1871.
No. 122-E. R., 9th February 1872.
G. O. No. 520, dated 26th February 1872.
No. 499-A. R., 6th April 1872.
G. O. No. 1,053, dated 23rd April 1872.
No. 618-G. R., 9th May 1872.
G. O. No. 1,348, dated 29th May 1872.
No. 1,130-G. R., 22nd July 1872.
G. O. No. 1,852, dated 6th August 1872.

SIR,—With reference to the letters from the Government of India marginally noted, I am directed by His Excellency the Governor in Council to submit the accompanying letter from the Consulting Engineer for Railways, No. 427, dated 14th August 1872, and to solicit instructions on the various points noticed therein by Lieutenant-Colonel Shaw-Stewart.

No. 15. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 8th August 1872, No. 417 :—

I HAVE the honour to forward, herewith, the review of the Revenue Account of the Great Southern of India Railway for the second half of 1871.

2. The preparation of the review has been greatly delayed by a number of references to the Agent of the Railway Company, the necessity for which will, it is hoped, be avoided in future.

3. Every endeavour has been made to render the review as complete as possible and to avoid such imperfections as have been previously remarked upon by the Government of India.

4. The revised form for Table A, which should have accompanied Government of India Resolution, Public Works Department (R), dated 29th September 1871, No. 1,875-R,* was not received in this office until the 31st October. This is, therefore, the first review in which Table A has been prepared in accordance with the revised form.

* G. O., No. 2,727, dated 27th October 1871.

5. Instructions are requested upon the following points :—

TABLE F.-I.

Weight on driving axle of locomotives ...	What information is required under this head? Should it be the total weight on all coupled axles?
Train miles hauled by each class of locomotives at works.	Are train-miles or engine-miles to be given? The return furnished by the Agent of the Great Southern of India Railway gives engine-miles.
Average speed between stations of trains and average through speed of trains.	The speeds hitherto (and now) given are the time-table speeds. The actual speeds can, of course, be worked out from the Engine Drivers' tickets and Guards' journals; but if this is done throughout the half-year the labour will be very great. Will it be sufficient to do this for one or two weeks in the half-year?
Average gross weight of the trains hauled by each class of locomotive.	In order to render this information accurately the mileage of vehicles and of freight must be separately recorded for each class of engines. This will involve a very great deal of labour. Will an approximation, derived from the working of a fortnight or a month in each half-year, suffice?

TABLE E.-I.

Thousands of tons hauled over each kind of rail.	This information cannot be accurately rendered unless the mileages of vehicles and freight are separately recorded for each portion of the line laid with a particular kind of rail.

TABLES E. AND F.

The ton-mileage used in the calculations of these tables does not include ton-mileage run on Capital Account, *e. g.*, ballasting on line open less than two years. Should this be allowed for?

TABLE G.

The vehicle-mileage used in calculations: this table does not include mileages of brakes, mileage of vehicles run free on Revenue Account, or mileages of vehicles ballasting on Capital Account, etc. The same vehicle-mileage is used in Table H, and, as the object is to arrive at the cost per vehicle-mile run for traffic purposes, this seems right; but in Table G the object is different, and it would appear that the whole mileage should be included.

GREAT SOUTHERN OF INDIA RAILWAY.

TABLE A.

General Statement of Working of half-year ending 31st December 1871.

Traffic.	Passengers or tons of goods carried. Number.	Per cent. of total number and total tonnage.	Earnings. Amount.	Per cent. of total earnings from Coaching and Goods.	Percentage of total earnings contributed by each description of traffic.
			RS.		
Coaching. Passengers. 1st Class ...	995	·24	4,808	2·02	58·19
2nd ,, ...	7,456	1·80	7,124	3·00	
3rd ,, ...	404,265	97·96	2,16,018	90·89	
4th ,, ...	...	...	...	...	
Miscellaneous earnings ...	...	...	9,718	4·09	
Total ...	412,716	100·00	2,37,668	100·00	...
	TONS.				
Goods ... General merchandize. Special ...	18,233	40·26	26,264	16·17	39·77
1st Class ...	18,638	41·16	74,702	45·98	
2nd ,, ...	4,934	10·90	28,679	17·65	
3rd ,, ...	2,178	4·81	16,819	10·35	
4th ,, ...	736	1·63	7,894	4·86	
5th ,, ...	279	0·61	4,947	3·05	
Government stores... ...	8	0·04	83	0·05	
Railway materials	279	0·61	2,260	1·39	
Minerals	...	...	...	...	
Miscellaneous earnings ...	...	...	808	0·50	
Total ...	45,285	100·00	1,62,456	100·00	...
Miscellaneous, including Electric Telegraph, Steam Boat, and sundries ...	...	...	8,330	...	2·04
Grand Total...	...	...	4,08,454	...	100·00
Less outstandings irrecoverable...	...	...	...	...	...
	...	...	4,08,454	...	...

General Statement of Working of half-year ending 31st December 1871.—(Continued.)

Financial results.	Coaching.			Goods.			Total (including Miscellaneous Earnings) and less irrecoverable outstandings.				
								Excluding Steam Boat traffic and contribution to Flotilla Reserve Fund.			
	Total.	Per total train mile.	Per open mile per week.	Total.	Per total train mile.	Per open mile per week.	Total.	Total.	Per total train mile.	Per open mile per week.	Percentage of profits on paid-up Capital.
	RS.	RS. A. P.	RS.	RS.	RS. A. P.	RS.	RS.	RS.	RS. A. P.	RS.	
Earnings	2,37,668	1 14 1	54·41	1,62,456	1 4 6	37·19	4,08,454	4,08,454	3 3 8	93·51	0·57
Expenses (M.-II., page 16) ...	97,668	0 12 4	22·36	1,26,923	1 0 1	29·06	2,30,517	2,30,517	1 13 2	52·77	
Profits	1,40,000	1 1 9	32·05	35,533	0 4 5	8·13	1,77,937	1,77,937	1 6 6	40·74	
Percentage of expenses to earnings	41·09	...	...	78·12	...	...	56·43	56·43	...	...	

General Statement of Working of half-year ending 31*st December* 1871.—(Concluded.)

Haulage.	Passenger.	Goods.	Mixed.	Total.
Number of trains run for public traffic.	......	......	1,346	1,346
Train mileage (D-I.-2, page 7) ...	......	......	126,544	126,544
Gross ton-mileage (M-I.-22, page 15)	......	......	21,236,130	21,236,130

Average composition of Trains.		Average number of Vehicles.			Average number of seats per Vehicle.		Average weight of Trains.	
		Passenger Trains.	Goods Trains.	Mixed Trains.	Provided.	Used.	Freight or live load.	Dead load, exclusive of Engine, Tender, and Brakes.
							TONS.	TONS.
Passenger ...	1st Class	...	...	0·51	20·0	0·88	7·635	41·402
	2nd ,, ...	...	...	0·45	51·6	6·28		
	3rd ,, ...	...	...	5·05	46·0	22·60		
	4th ,, ...	...	...	...	...	...		
	Others, including Brakes.	...	...	0·98	...	...		
Goods.—*Vehicles of all kinds including Brakes*		...	...	7·57	Carrying capacity in tons 1·5 to 6		20·035	44·747
Total...		...	...	14·56	According to nature of goods.		27·670	86·149

N. B.—For average load per vehicle, see page

Open Mileage on 31st December 1871.			Mean mileage worked.	Average number of stations maintained.	Capital expended on open mileage, inclusive of rolling stock.	Cost per mile open.	Total length of the following gradients:			Steepest gradients worked by			
										Fixed power.		Locomotives.	
Single.	Double.	Total.					$\frac{1}{100}$ and less.	$\frac{1}{101}$ to $\frac{1}{200}$	$\frac{1}{201}$ to $\frac{1}{300}$	Length.	Inclination.	Length.	Inclination.
					£	£	M. CHS.	M. CHS.	M. CHS.			M. CHS.	
168	...	168	168	21	1,384,750	8,242	3 46	9 11	11 08	*Nil.*	*Nil.*	1 60	1 in 100

TABLE B.

Statement showing in comparison the Coaching Traffic of the half years ending 31*st December* 1870 *and* 31*st December* 1871.

Reference to Revenue Account.		Details.	Number.		Fare per Mile.		Receipts.		Average Mileage.	
Table and main head.	Sub head.		2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.
					PIES.	PIES.	RS.	RS.		
X. (H.) 1	...	FIRST CLASS PASSENGERS—								
		Single journey ...	508	828	18	18	2,696	4,097	...	53
		Excess fares ...	24	46			78	89	...	...
		Return journey ...	82	164			300	598	...	69
		Troops and Police ...	...	8			...	24	...	...
		Total...	590	995	...	...	3,074	4,808	56	55
		Season tickets ...	...	...	...	...	...	...	...	...
1	...	SECOND CLASS—								
		Single journey ...	3,684	3,584	5	5	4,244	4,220	...	47
		Excess fares ...	189	195			93	96	...	...
		Return journey ...	2,120	3,704			1,229	2,396	...	47
		Troops and Police ...	37	167			80	362	...	...
		Total ...	5,841	7,455	...	...	5,646	7,074	37	47
		Season tickets ...	...	1	...	...	...	50	...	...
1	...	THIRD CLASS—								
		Single journey ...	346,456	342,905	3	3	1,71,416	1,72,753	...	35
		Excess fares ...	416	549			172	259	...	...
		Return journey ...	30,962	59,198			20,744	40,604	...	67
		Troops and Police ...	1,791	2,162			1,941	2,402	...	...
		Total...	379,209	404,265	...	...	1,94,273	2,16,018	30	36
		Season tickets ...	...	...	...	...	...	...	...	...
1	...	FOURTH CLASS—								
		Single journey ...	...	...	...	...	...	...	...	...
		Excess fares ...	...	...	...	...	...	...	...	...
		Return journey ...	...	...	...	...	...	...	...	...
		Troops and Police ...	...	...	...	...	...	...	...	...
		Total ...	...	...	...	...	...	...	...	...
		Season tickets ...	...	...	...	...	...	...	...	...
			TONS.	TONS.						
2	...	PASSENGERS' LUGGAGE ...	65	102	2 Pies per maund per mile.		1,615	2,179	70	73
3	...	MILITARY BAGGAGE ...	...	1	...	...	...	34	...	91
			No.	No.						
4	1	PUBLIC ... Carriages ...	52	93	Vide list attached.		1,933	639	63	99
	2	Horses ...	110	226				1,240	76	65
	3	Dogs ...	184	243				195	58	61
5	1	MILITARY ... Carriages ...	...	...	...	...	...	...	...	...
	2	Horses ...	...	3	...	...	...	20	...	85
	3	Dogs ...	...	...	...	...	...	...	...	...
			TONS.	TONS.						
6	...	PARCELS	167	151	*Vide* list attached.		6,280	5,353	74	72
			No.	No.						
7	...	SPECIAL TRAINS	...	...	Do.	do.	156	...	...	...
		POST OFFICE—								
8	1	Haulage and hire of Post Office vehicles ...	...	...	...	...	...	...	...	...
	2	Special Trains ...	...	...	...	...	...	...	...	...
	3	Parcels	...	1	4 Pies per maund per mile.		70	58	...	73
		Total ...	...	...	...	...	10,054	9,718	...	...
		Grand Total...	...	...	...	...	2,13,047	2,37,668	...	...

TABLE C.

Statement showing in comparison the Goods Traffic of the half years ending 31st December 1870 and 31st December 1871.

Reference to Revenue Account.		—	Quantity.				Rate per Ton Mile.		Receipts.		Average Mileage.	
			2nd half of 1870.		2nd half of 1871.							
Table and main head.	Sub head		Up.	Down.	Up.	Down.	2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.
		General Merchandize—	TONS.	TONS.	TONS.	TONS.	PIES.	PIES.	RS.	RS.		
X. (I.) 1	...	Special Class ...	2,728	1,157	2,443	15,789	8	8	21,579	26,264	133	35
		1st " ...	9,861	12,173	6,021	12,617	12	12	77,714	74,702	56	64
		2nd " ...	2,524	3,929	1,645	3,289	14	14	33,320	28,679	70	80
		3rd " ...	754	1,238	555	1,643	18	18	14,203	16,819	76	80
		4th " ...	309	808	243	493	24	24	9,638	7,894	69	84
		5th " ...	94	199	102	178	36	36	5,116	4,947	93	89
		Total...	16,270	19,503	11,009	33,989	...	...	1,61,570	1,59,305	45	55
2	...	Military Stores...	...	...	8	...	...	...	...	83	...	86
3	...	Railway materials for construction ...	62	306	136	143	14	14	1,198	2,260	77	129
		Minerals—										
6	...	For the public ...	...	...	...	...	...	...	...	...	...	...
		Do. Company ...	...	...	...	...	...	...	...	...	...	...
		(*Construction only.*)	...	...	...	...	...	...	...	...	...	...
		Total...	62	306	144	143	...	...	1,198	2,343	77	127
		Grand Total...	16,332	19,809	11,153	34,132	...	...	1,63,072	1,61,886	...	...
			TONS.	TONS.	No.	No.	Rate per animal per mile.					
		Live Stock—										
4	...	Horses ...										
		Cattle ...	6,475	1,100	80	7	*Vide* list attached.		304	195	59	12
		Sheep ...	...	...	463	44	...	...	...	43	...	56
		Military Live Stock—										
5	...	Horses ...	...	...	...	...	...	...	...	...	...	...
		Cattle ...	...	...	...	...	...	...	...	...	...	...
		Sheep ...	...	...	...	...	...	...	...	...	...	...

TABLE C-I.

Comparative Statement showing the Weight and Earnings of the principal commodities carried during the above half years.

Description.	Quantity.		Receipts.		Increase in quantity.	Decrease in quantity.	Increase in receipts.	Decrease in receipts.
	2nd half of 1870.	2nd half of 1871.	2nd half of 1870.	2nd half of 1871.				
	TONS.	TONS.	RS.	RS.	TONS.	TONS.	RS.	RS.
Areca Nuts	942	771	5,591	3,554	...	171	...	2,037
Cloth	269	329	9,536	4,256	60	...	...	5,280
Currystuffs	321	1,752	5,616	5,022	1,431	...	...	594
Fruit and vegetables ...	407	1,933	6,052	6,500	1,526	...	448	...
Grain of all kinds... ...	14,064	15,656	50,686	42,449	1,592	...	...	8,237
Granite stones	961	7,666	7,297	13,047	6,705	...	5,750	...
Hides	236	345	5,877	6,270	109	...	393	...
Oil and Ghee	351	1,716	7,691	6,283	1,365	...	...	1,408
Oil cakes	843	2,079	6,933	6,906	1,236	...	...	27
Salt	4,032	5,626	21,197	31,112	1,594	...	9,915	...
Seeds of all kinds	925	2,834	10,768	13,468	1,909	...	2,700	...
Sundries	1,981	4,026	17,401	14,808	2,045	...	...	2,593
Tobacco	327	265	7,238	5,713	...	62	...	1,525
Total...	25,659	44,998	1,61,883	1,59,388	19,572	233	19,206	21,701

TABLE D.

*Statement of Mileage maintained.**

Reference to Revenue Account: Table and main head.	Reference to Revenue Account: Sub head.	Details.	2nd half of 1870: Departmentally	2nd half of 1870: By contract.	2nd half of 1870: Total.	2nd half of 1871: Departmentally	2nd half of 1871: By contract.	2nd half of 1871: Total.	Total increase.	Total decrease.
IX. (A.)	...	1. Mean miles of line maintained. Single ...	168	...	168	168	...	168	...	...
		2. Mean miles of line maintained. Double ...	...	...	...	...	...	...	...	...
		3. Mean miles of line maintained. Total ...	168	...	168	168	...	168	...	...
		4. " Sidings maintained, Total... ...	13¾	...	13¾	13⅞	...	13⅞	⅛	...
		5. " Single Track Total including Sidings.	181	...	181¾	181⅞	...	181⅞	⅛	...

* From Revenue Funds.

TABLE D-I.

Statement of Train Mileage.

No.	Details.	Train Miles run for: Traffic Department.	Train Miles run for: Locomotive Department.	Train Miles run for: Maintenance Department.	Hours of: Assisting Engines.	Hours of: Shunting, Piloting, etc.	Hours of: Miscellaneous Services.
	Reference to Revenue Account.	XIV.-1.	XIV.-2.	XIV.-3.	XIV.-4.	XIV.-5.	XIV.-6.
					H. M.	H. M.	H. M.
1	2nd half of 1870. Passenger ... Goods ... Mixed ...	119,420	...	9,007	5 3	4,511 31	1,221 3
	Total...	119,420	...	9,007	5 3	4,511 31	1,221 3
2	2nd half of 1871 Passenger ... Goods ... Mixed ...	126,544	...	3,920	0 42	5,289 55	1,223 25
	Total...	126,544	...	3,920	0 42	5,289 55	1,223 25
3	Increase in 1871 Passenger ... Goods ... Mixed ...	7,124	...	...	...	778 24	2 22
	Total...	7,124	...	...	...	778 24	2 22
4	Decrease in 1871 Passenger ... Goods ... Mixed ...	...	...	5,087	4 21	...	...
	Total...	...	...	5,087	4 21	...	...

TABLE E.

Maintenance of Way, Works, and Stations.

RAILS.

Reference to Revenue Account. Table and main head.	Sub head.	—	2nd half of 1870. Total.	2nd half of 1871. Total.	Increase.	Decrease
XIV.	...	Train-Mileage (D-I. 1 page 7)...	119,420	126,544	7,124	...
		Ton-Mileage (M-I. 22 page 15)...	18,842,934	21,236,130	2,393,196	...

Table and main head.	Sub head.	Details.	Half of 1870. Total.	Half of 1871. Total.	Increase.	Decrease	Per mile of line maintained. D.-3.	Per mile of track including sidings. D.-5.	Per Train Mile.	Per 1,000 Ton Miles.
			RS.	RS.	RS.	RS.	RS.	RS.	AS.	RS.
If done Departmentally. IX. (A.) I.		SUPERINTENDENCE—								
	1 & 2	Engineers' salaries and allowances	2,982	3,787	805	...	22·542	20·821	0·507	0·178
	3 to 5	Inspectors' and Platelayers' salaries and allowances, including overtime ...	4,709	3,878	...	831	23·084	21·322	0·520	0·183
	6	Office expenses	2,819	2,176	...	643	12·952	11·964	0·291	0·102
2		MAINTENANCE AND RENEWAL OF PERMANENT WAY—								
	1	Wages	21,074	20,147	...	927	119·923	110·771	2·699	0·949
	2	Materials	21,761	20,489	...	1,272	121·958	112·651	2·745	0·965
3		REPAIRS OF BRIDGES, ETC.—WAGES AND MATERIALS—								
	1	Bridges and Tunnels ...	369	161	...	208	0·958	0·885	0·022	0·008
	2	Miscellaneous ...	2,797	658	...	2,139	3·917	3·618	0·088	0·031
4		REPAIRS OF STATIONS AND BUILDINGS—WAGES AND MATERIALS—								
	1	Repairs of all, except Staff quarters	2,067	3,126	1,059	...	18·607	17·187	0·419	0·147
	2	Repairs of Staff quarters.	392	475	83	...	2·827	2·612	0·064	0·022
5	...	MAINTENANCE BY CONTRACT ...	...	...	...	...	...	...	...	...
6		UNCLASSIFIED EXPENDITURE—								
	1	Plantations	1,374	105	...	1,269	0·625	0·577	0·014	0·005
	2	Tools and Plant ...	309	150	...	159	0·893	0·825	0·020	0·007
	3	Loss on stores, etc. ...	309	3	...	306	0·018	0·016	0·001	0·
		Total...	* 60,962	55,155	1,947	7,754	328·304	303·249	7·390	2·597

TABLE E-I.

Maintenance of Way.

RAILS.

No.	Details.	Double-headed. 68 LBS.	Double-headed. LBS.	Bridge. LBS.	Flat-footed. LBS.	Others.	Total.
1	Miles of rail in way, including sidings ...	180¼	...	...	...	...	180½
2	Average age of rails in way at the middle of the half-year in years	7	...	...	...	...	7
3	Rails inverted... Number	1,134	...	...	...	...	1,134
	Rails inverted... Miles	2·25	...	...	...	...	2·25
4	Proportion inverted per mile of (1) rail ...	504	...	...	...	...	504
5	Rails renewed... Number	86	...	...	...	...	86
	Rails renewed... Miles	·171	...	...	...	...	·171
6	Proportion renewed per mile of (1) rail ...	502 9	...	...	...	...	502·9
7	Average number of tons hauled over each kind of rail in the half-year	126,400	...	...	...	...	126,400
8	Thousands of tons hauled on an average over each kind of rail during the average age of rails in way (2)	*2,025,000	...	...	...	...	*2,025,000

* Approximately.

TABLE E-II.

Maintenance of Way.

SLEEPERS.

No.	Details.	Wooden Sleepers of all descriptions.	Iron Pot Sleepers, pairs.
		No.	
1	Number of sleepers in way including sidings	145,442	171,798
2	* Average age of sleepers in way at the middle of the half-year, in years ...	10	4¼
3	Number renewed	20,364	18¼
4	Do. do. per cent. of (1)	14 0015	·01077

* Since receipt by Store Department.

TABLE F.

Locomotive Department Expenses.

Reference to Revenue Account. Table and main head.	Sub head.	—	2nd half of 1870. Total.	2nd half of 1871. Total.	Increase.	Decrease.		
XIV.	...	Train Mileage (D-I. 1, page 7) ...	119,420	126,544	7,124	...		
		Ton Mileage (M-I. 22, page 15) ...	18,842,934	21,236,130	2,393,196	...		
		Details.	**Half of 1870. Total.**	**Half of 1871. Total.**	**Increase.**	**Decrease.**	**Per Train Mile.**	**Per 1,000 Ton Miles.**
		GENERAL SUPERINTENDENCE—	RS.	RS.	RS.	RS.	AS.	RS.
IX. (B.) 1	1 & 2	Salaries of Locomotive Superintendents and Assistants, including allowances ...	2,403	2,477	74	...	0·332	0·117
	3 to 5	Salaries of Foremen, including allowances and overtime ...	9,034	6,263	...	2,771	0·819	0·295
	6	Office expenses	2,546	2,378	...	168	0·39	0·112
		RUNNING EXPENSES—						
2	1 & 2	Wages of Drivers and Firemen, including overtime ...	16,184	15,917	...	267	2·132	0·749
	3	Fuelling, cleaning, and looking after engines	1,844	1,189	...	655	0·159	0·056
	4	Contingent expenses ...	...	...	...	...	...	...
		FUEL—						
3	1	Coal	34,112	19,724	...	14,388	2·642	0·929
	2	Coke	...	...	...	...	...	...
	3	Patent Fuel	...	12,064	12,064	...	1·616	0·568
	4	Wood	1,100	1,905	805	...	0· 55	0·090
4	1, 2, & 3	WATER	1,130	1,109	...	21	0·149	0·053
5	...	OIL, TALLOW, ETC.	1,796	1,985	189	...	0·266	0·093

Locomotive Department Expenses.—(Concluded.)

Reference to Revenue Account.		Details.	Half of 1870.	Half of 1871.			Per Train Mile.	Per 1,000 Ton Miles.
Table and main head.	Sub head.		Total.	Total.	Increase.	Decrease.		
		Maintenance and Renewals—	RS.	RS.	RS.	RS.	AS.	RS.
6	1 & 2	Wages, including overtime ...	3,373	4,745	1,372	...	0 636	0·223
	3	Materials	11,555	14,763	3,208	...	1·978	0·695
7	...	Services of other Lines ...	...	...	...	...	...	...
8	...	Unclassified Expenditure ...	...	183	183	...	0·025	0·009
		Total...	85,077	84,702	17,895	18,270	11·348	3·988
			Total quantity.	Total quantity.	Increase.	Decrease.	Quantity per Train Mile.	Quantity per 1,000 Ton Miles.	
			TONS.	TONS.	TONS.	TONS.	LBS.	LBS.	
IX.(B.) 3	1	Coal consumed	1,676	1,014	...	62	19·02	106·96	
	2	Coke do.	...	...	...	...	...	...	
	3	Patent fuel consumed... ...	...	606	606	...	11·37	63·92	
	4	Wood do.	261	382	121	...	7·17	40·29	

TABLE F-I.

Locomotive Power.

Reference to Revenue Account.		Description.	Passenger.	Goods.	Goods.	Tank.	Total.
Table and main head.	Sub head.						
...	...	Locomotives ... Wheels coupled	4 coupled.	6 coupled.	4 coupled.	4 coupled.	...
		Weight on driving axle ...	9 tons.	$10\frac{1}{2}$ tons.	$9\frac{1}{2}$ tons.	8 tons.	...
		Total weight in steam, exclusive of tender ...	$23\frac{1}{2}$ tons.	$29\frac{1}{2}$ tons.	28 tons.	15 tons.	...
XII.	...	1.—Number of locomotives erected and made over to Locomotive Department ...	9	6	4	2	21
		2.—Average number of locomotives constantly under repairs	3·94	3·46	0·42	0·56	8·38
		3.—Average number of locomotives at work (1—2)	5·06	2·54	3·58	1·44	12·62
		4.—Train miles hauled by each class of locomotives at work (3)	71,605	30,044	45,540	14,988	1,62,177
		5.—Average train miles hauled by each locomotive at work (3)—					
		Per half-year	7,956	5,007	11,385	7,494	31,842
		Per day	44	28	62	41	173
		6.—Average speed between stations of trains. Passenger ...	25 miles per hour.	Through mi	xed trains.		
		Goods	...	...	...	...	...
		Mixed	...	18 miles per hour.	Local mix	ed trains.	
		7.—Average through speed of trains. Passenger ...	20 miles per hour.	Through mi	xed trains.		
		Goods	...	...	...	...	...
		Mixed	...	15 miles per hour.	Local mix	ed trains.	
		8.—Weight of coal, etc., used per train mile. (*To be separated, if possible, among the classes of locomotives.*)	21·6	32·9	21·1	9·2	21·75
		9.—Weight of wood used per train mile. (*To be separated, if possible, among the classes of locomotives.*)	6·3	3·7	2 3	8·3	5·27
		10.—Average gross weight of the trains hauled by each class of locomotive ...	...	Not	recorded.	...	...

TABLE G.

Carriage and Waggon Expenses.

Reference to Revenue Account.		Details.	2nd half of 1870.	2nd half of 1871.			
Table and main head.	Sub head.		Total.	Total.	Increase.	Decrease.	
XIV.	...	Train Mileage (D-I. 1, page 7) ...	119,420	126,544	7,124	...	
		Vehicle Mileage. Coaching (M-I. 8, page 14)	745,424	869,671	124,247	...	
		Vehicle Mileage. Goods (M-I. 14, page 14)	1,331,872	963,453	...	368,419	
		Total...	2,077,296	1,833,124	...	244,172	

Reference to Revenue Account.		Details.	2nd half of 1870.	2nd half of 1871.				
Table and main head.	Sub head.	—	Total.	Total.	Increase.	Decrease.	Cost per Train Mile.	Cost per 1,000 Vehicle Miles.
		General Superintendence—	RS.	RS.	RS.	RS.	AS.	RS.
IX (C.) 1.	1 & 2	Salaries of Superintendents and allowances ...	1,282	360	...	922	0·048	0·196
	3 to 5	Salaries of Foremen and allowances, including overtime	859	703	...	156	0·094	0·384
	6	Office expenses	295	306	11	...	0·041	0·167
		Repairs and Renewals of Vehicles and Machinery—						
2	1 to 3	Coaching Vehicles. Wages, including overtime ...	755	1,211	456	...	0·162	(a) 1·392
		Coaching Vehicles. Materials ...	2,428	5,345	2,917	...	0·716	(a) 6·146
	1 to 3	Goods Vehicles. Wages, including overtime ...	1,003	2,048	1,045	...	0·275	(b) 2·126
		Goods Vehicles. Materials ...	5,268	7,980	2,712	...	1·069	(b) 8·283
		Cleaning and Oiling—						
3	1	Labour, including wages of oilers, etc.	647	1,294	647	...	0·173	0·706
	2	Stores...	1,224	946	...	278	0·127	0·516
4	...	Unclassified expenditure ...	...	...	...	...	...	...
		Total ...	13,761	20,193	7,788	1,356	2·705	11·016

TABLE H.

Traffic Expenses.

Reference to Revenue Account.		Details.	2nd half of 1870.	2nd half of 1871.			
Table and main head.	Sub head.		Total.	Total.	Increase.	Decrease.	
XIV.	...	Train Mileage (D-I. 1, page 7) ...	119,420	126,544	7,124	...	
		Vehicle Mileage Coaching (M-I. 8, page 14)	745,424	869,671	124,247	...	
		Vehicle Mileage Goods (M-I. 14, page 14)	1,331,872	963,453	...	368,419	
		Total...	2,077,296	1,833,124	...	244,172	

Traffic Expenses.—(Concluded.)

Reference to Revenue Account. Table and main head.	Reference to Revenue Account. Sub head.	Details.	2nd half of 1870. Total.	2nd half of 1871. Total.	Increase.	Decrease.	Cost per Train Mile.	Cost per 1,000 Vehicle Miles.
		SALARIES, WAGES, ETC.—	RS.	RS.	RS.	RS.	AS.	RS.
IX. (D.) 1	(1 & 3) *a*	General Superintendence, including travelling allowances	3,455	3,570	115	...	0·478	1·948
	(2 & 4) *a*	Office Establishment and contingencies	594	558	...	36	0·075	0·304
	b	Station staff	14,594	14,124	...	470	1·892	7·704
	c	Train staff	2,859	2,752	...	107	0·369	1·501
2	1 to 3	FUEL, LIGHTING, WATER, AND GENERAL STORES	4,028	1,136	...	2,892	0·152	0·620
3	...	CLOTHING	424	763	339	...	0·102	0·416
4	...	PRINTING, STATIONERY, AND TICKETS	1,962	1,425	...	537	0·191	0·777
5	...	CATTLE USED FOR TRAFFIC PURPOSES, AND DELIVERY AND COLLECTION OF GOODS	...	...	...	..	...	...
		Greasing rolling stock ...	...	...	...	...	...	...
6	...	MISCELLANEOUS EXPENSES ...	235	246	11	...	0·033	0·134
		PAYMENTS TO OTHER LINES—						
7	1	Hire of Vehicles	...	...	...	...	...	...
	2	Mileage of foreign stock ...	656	1,252	596	...	0·168	0·683
	3	Use of stations	5,554	6,041	487	...	0·809	3·296
8	...	UNCLASSIFIED EXPENDITURE ...	...	...	...	...	...	...
		Total ...	34,361	31,867	1,548	4,042	4·269	17·383

TABLE J.

General Charges.

Reference to Revenue Account. Table and main head.	Reference to Revenue Account. Sub head.	Details.	2nd half of 1870. Total.	2nd half of 1871. Total.	Increase.	Decrease.	Cost per Train Mile.
			RS.	RS.	RS.	RS.	AS.
IX. (E.) 1	...	HOME EXPENDITURE	9,411	11,071	1,660	...	1·484
		INDIAN MANAGEMENT—					
2	1	Agent's Office, including travelling and other allowances	10,283	12,449	2,166	...	1·664
	2	Auditor's Office, do.					
	3	Account's Office, do.					
	4	Paymaster's Office, do.					
	5	Store Department, do.	1,689	3,270	2,730	...	0·438
	6	Medical Department, do.		1,149	...	...	0·154
	7	Rents					
	8—10	Contingencies, stationery, and medicine.	783	1,041	258	...	0·140
3	...	POLICE *(total charges)*	...	...	...	...	...
4	...	ADVERTISING	68	125	57	...	0·017
		ELECTRIC TELEGRAPH—					
5	1 to 4	Salaries, etc.	3,827	3,070	...	757	0·413
	5	Maintenance (labour and stores) ...	22	154	132	...	0·022
6	...	CLEARING ACCOUNTS WITH OTHER LINES ...	...	...	...	...	...
7	...	UNCLASSIFIED EXPENDITURE... ...	...	...	...	...	...
		Loss on stores	...	...	...	...	...
		Total...	26,083	32,329	7,003	757	4·331

TABLE K.

Steam Boat Service.

Reference to Revenue Account.		Details.	2nd half of 1870.	2nd half of 1871.		
Table and main head.	Sub head.		Total.	Total.	Increase.	Decrease.
IX. (F) 1	...	Working vessels	...	...	...	...
2	...	Repairs	...	...	...	...
3	...	Fuel	...	...	...	...
4	...	Miscellaneous stores	...	...	...	...
5	...	Steam Traffic Agencies	...	...	...	...
6	...	Unclassified expenditure	...	...	...	...
		Total...	...	...	...	...

TABLE L.

Special and Miscellaneous Expenditure.

Reference to Revenue Account.		Details.	2nd half of 1870.	2nd half of 1871.		
Table and main head.	Sub head.		Total.	Total.	Increase.	Decrease.
IX. (G.) 1	...	Law Charges	3	11	8	...
		Compensation—				
2	1	Claims for goods, etc.	89	59	...	30
	2	Personal injury	...	...	...	...
3	...	Rates and Taxes	1,593	1,200	...	393
		Contributions to Special Funds—				
4	1	Fire Insurance Fund	5,000	5,000	...	...
	2	P. W. Renewal Fund	...	...	...	...
	3	Casualty Fund...	...	...	...	...
		Value of boats purchased	821	...	...	821
		Total...	7,506	6,270	8	1,244

ANALYSIS OF CARRYING COST.

TABLE M.-I.

Definitions.

The unit of Passenger Traffic is—1 passenger *plus* free luggage.
,, of Carriages is—1 carriage.
,, of Horses is—1 horse.
,, of Luggage is—1 ton.
,, of Post Office Vehicles is—1 ,,
,, of Goods is—1 ,,
,, of Cattle is—1 ,,

Approximate weight of units adopted in these calculations.

	CWT.	TON.
COACHING—		
First class Passenger with free luggage	1·75	= 0·0875
Second ,, ,, do.	...1·75	= 0·0875
Third ,, ,, do.	...1·25	= 0·0625
Fourth ,, ,, do.	...1·25	= 0·0625
A carriage (average for two and four-wheeled)	... 6·75	= 0·3375
COACHING—(*Concluded.*)		
A horse	... 8·75	= 0·4375
A dog	... 0·20	= 0·0100
GOODS—		
A head of horned cattle ...	... 5·00	= 0·2500
A head of sheep, goats, etc.	... 0·50	= 0·0250

	Details.	Total mileage of each description of rolling stock.	Total mileage of units of traffic.	Average contents in units of each Vehicle. No.	Average contents in units of each Vehicle. Weight in Tons.	Average weight of rolling stock in tons.	Total average weight including contents of each vehicle in tons.	Tons of vehicles and freight per ton of freight.	Ton Mileage. Of freight.	Ton Mileage. Of dead weight.	Total Ton Mileage. Excluding Engines and Tenders and Brake Vans.	Total Ton Mileage. Including Engines and Tenders and Brake Vans.
	COACHING.											
1	1st Class	64,618	56,758	0·878	0·077	7·29	7·367	95·85	4,966	471,065	476,031	...
2	2nd ,, ...	56,988	357,536	6·278	0·549	7·22	7·769	14·15	31,284	411,453	442,737	...
3	3rd ,, ...	638,431	14,441,589	22·620	1·414	5·58	6·994	4·95	902,600	3,561,145	4,463,745	...
4	4th ,, ...	...	...	...	...	...	...	...	...	...	...	...
5	Carriage trucks	5,066	6,189	1·222	0·412	5·06	5·472	13·27	2,089	25,634	27,723	...
6	Horse Boxes	18,391	14,875	0·809	0·354	7·06	7·414	20·95	6,508	129,866	136,374	...
7	Luggage, Parcels, and Dogs' Vans.	86,177	18,659	0·217	0·217	6·11	6·327	29·22	18,659	526,542	545,201	...
7-A.	Post Office Vehicles	...	...	...	...	...	...	...	...	...	...	...
8	Total...	869,671	...	...	...	...	...	...	966,106	5,125,705	6,091,811	...
9	Passenger Engines and Tenders.	...	...	...	...	41·64	...	...	...	2,837,073	...	...
10	Do. Brake Vans ...	18,565	...	...	...	6·11	...	...	...	113,432	...	...
11	Total Coaching Ton Mileage...	...	...	...	...	...	...	...	966,106	8,076,210	6,091,811	9,042,316
	GOODS.											
12	Goods Vehicles	961,519	2,531,998	2·633	2·633	5·73	8·363	3·176	2,531,998	5,500,613	8,032,611	...
12-A.	Cattle Vans	1,934	37,361*	19·318	1·614	6·11	7·724	4·786	3,121	11,818	14,939	...
13	Mineral trucks	...	...	...	...	...	...	...	...	...	...	...
14	Total...	963,453	...	...	...	...	...	...	2,535,119	5,512,431	8,047,550	...
15	Goods Engines and Tenders ...	...	...	...	...	41·64	...	...	...	3,747,897	...	...
16	Do. Brakes	24,524	...	...	...	6·11	...	...	...	149,842	...	...
17	Total Goods Ton Mileage...	...	...	...	...	...	...	...	2,535,119	9,410,170	8,047,550	11,945,289

	MISCELLANEOUS FOR STORES CARRIED FREE ON REVENUE ACCOUNT.											
18	For Traffic Department ...	397	2,580	6·499	6·499	5·99	12·489	1·922	2,580	2,378	4,958	...
19	,, Locomotive do. ...	4,682	18,004	3·845	3·845	4·94	8·785	2·284	18,004	23,129	41,133	...
20	,, Engineering do. ...	4,690	20,697	4·413	4·413	5·26	9·673	2·192	20,697	24,669	45,366	...
20-A.	Total...	9,669	...	...	...	...	...	...	41,281	50,176	91,457	...
20-B.	Engines and Tenders ...	...	...	...	...	39·67	...	...	...	157,068	...	...
20-C.	Brake Vans	...	...	...	...	...	...	...	...	...	...	...
21	Total Miscellaneous Ton Mileage...	...	...	...	...	...	...	...	41,281	207,244	91,457	248,525
22	Total Ton Mileage...	...	...	...	...	...	...	...	3,542,506	17,693,624	14,230,818	21,236,130

* Mileage of horned cattle 9,720
Do. of sheep 27,641

Total... 37,361

M-II.

Division between Coaching and Goods of the expenditure of Departments.

Details.	Maintenance.	Locomotive.	Carriage and Waggon.	Traffic.	General.	Special and Miscellaneous. Permanent Way Renewal Fund.	Special and Miscellaneous. Other items.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Expenses due to Coaching	22,680	36,426	7,753	15,077	13,830	...	1,902	97,668
Do. due to Goods	29,962	48,120	11,355	16,703	18,271	...	2,512	1,26,923
Total...	52,642	84,546	19,108	31,780	32,101	...	4,414	2,24,591

M-III.

Distributed Cost of carrying the Vehicles of each Class including Freight.

Details.	First Class Carriages.	Second Class Carriages.	Third Class Carriages.	Fourth Class Carriages.	Carriage Trucks.	Horse Boxes.	Luggage Vans.	Post Office Vehicles.	Total Coaching Stock.	Goods Vehicles.	Cattle Vans.	Mineral Trucks.	Total Goods Stock.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Maintenance	1,772	1,648	16,619	...	103	508	2,030	...	22,680	29,906	56	...	29,962
Locomotive	2,847	2,647	26,691	...	166	815	3,260	...	36,426	48,031	89	...	48,120
Carriage and Waggon	576	508	5,692	...	45	164	768	...	7,753	11,332	23	...	11,355
Traffic	1,120	988	11,068	...	88	319	1,494	...	15,077	16,669	34	...	16,703
General	1,028	906	10,153	...	81	292	1,370	...	13,830	18,234	37	...	18,271
Special and Miscellaneous. P. W. Renewal Fund...	...	...	...	...	...	...	...	...	...	...	...	...	...
Special and Miscellaneous. Other items ...	141	125	1,396	...	11	40	189	...	1,902	2,507	5	...	2,512
Total...	7,484	6,822	71,619	...	494	2,138	9,111	...	97,668	1,26,679	244	...	1,26,923

M-IV.

Classified cost of working over one mile a Vehicle, including its freight; also total cost of carrying over one mile a unit of each description of Traffic.

Details.	First Class.	Second Class.	Third Class.	Fourth Class.	Carriage Trucks.	Horse Boxes.	Luggage Vans.	Post Office Vehicles.	Goods Vehicles.	Cattle Vans.	Mineral Trucks.
	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.	PIES.
Maintenance	5·266	5·553	4·998	......	3·912	5·300	4·522	......	5·972	5·522	......
Locomotive	8·458	8·919	8·027	......	6·283	8·513	7·263	......	9·591	8·868	......
Carriage and Waggon	1·712	1·712	1·712	......	1·712	1·712	1·712	......	2·263	2·263	......
Traffic	3·329	3·329	3·329	......	3·329	3·329	3·329	......	3·329	3·329	......
General	3·053	3·053	3·053	......	3·053	3·053	30·53	......	3·641	3·641	......
Special and Miscellaneous: P.W. Renewal Fund	......	......	......	......	......	......	......	......	......	......	......
Special and Miscellaneous: Other items ...	0·420	0·420	0·420	......	0·420	0·420	0·420	......	0·500	0·500	......
Total...	22·238	22·986	21·539	......	18·709	22·327	20·299	......	25·296	24·123	......
Cost per unit...	25·317	3·664	0·952	......	15·325	27·596	93·752	......	9·606	1·254	......

M-V.

Statement showing in comparison the receipts and the carrying cost per unit per mile of Coaching and Merchandize Traffic.

Details.	Average receipt per unit per mile.	Actual cost per unit per mile.	Profit per unit per mile.	Loss per unit per mile.	Proportion per cent. of profits to receipts.
COACHING—	PIES.	PIES.	PIES.	PIES.	
1st Class	16·264	25·317	......	9·053	......
2nd "	3·799	3·664	0·155	......	4·080
3rd "	2·872	0·952	1·920	......	66·854
4th "	......	......	......	......	......
Carriages	19·824	15·325	3·499	......	17·605
Horses	16·263	27·596	......	11·333	......
Luggage	80·447	93·752	......	13·305	......
Post Office Vehicles	......	......	......	......	......
GOODS—					
Merchandize, including Government Stores and Railway materials ...	12·258	9·606	2·652	......	21·635
Cattle	1·218	1·254	......	0·036	......
Minerals	......	......	......	......	......

MADRAS,
8th August 1872.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 149.

Dr. *Statement of Revenue Account for the half-year ending 31st December 1871.* Cr.

Half-year ended 31st Dec. 1870. Train Miles, 119,420.	—	Amount.	Train Miles, 126,544. Cost per Train Mile.	Per-centage of Working Expenses.	Per-centage of Revenue.	Half-year ended 31st Dec. 1870.	—	Amount.	Earnings per Train Mile.
RS. A. P.		RS. A. P.	AS.			RS. A. P.		RS. A. P.	AS.
60,962 6 3	To Maintenance of Way and Works (Abstract A.)	55,155 4 1	6·97	23·93	13·50	2,13,046 13 0	By Coaching Traffic (Abstract H.) ...	2,37,668 3 1	30·05
85,076 9 1	,, Locomotive Expenses (Abstract B.) ...	84,701 12 9	10·71	36·75	20·74	1,63,166 0 11	,, Goods do. (Abstract I.)	1,62,456 5 5	20·54
13,761 7 7	,, Carriage and Waggon Expenses (Abstract C.)	20,192 9 8	2·55	8·76	4·95	2,058 6 8	,, Electric Telegraph Receipts	2,404 11 10	·30
34,361 5 10	,, Traffic Expenses (Abstract D.)	31,867 7 2	4·03	13·82	7·80	7,505 1 8	,, Sundry do. (Abstract K.) ...	5,925 3 8	·75
26,082 11 4	,, General Charges (Abstract E.)	32,329 6 5	4·09	14·02	7·91				
7,506 0 5	,, Special and Miscellaneous (Abstract G.)	6,270 4 1	·79	2·72	1·54				
2,27,750 8 6		2,30,516 12 2	29·14	100·00	56·44				
1,58,025 13 9	Balance...	1,77,937 11 10	22·50	......	43·56				
3,85,776 6 3	Total...	4,08,454 8 0	51·64	100·00	100·00	3,85,776 6 3	Total...	4,08,454 8 0	51·64

Negapatam,
5th March 1872.

(Signed) J. SMITH,
Chief Auditor.

(Signed) W. S. BETTS,
Agent and Traffic Manager.

(Signed) S. M. JOHNSON,
Assistant Controller.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R. E.,
Consulting Engineer for Railways.

ABSTRACT A.

Maintenance of Way and Works.

	RS. A. P.	RS. A. P.
1ST.—SALARIES, OFFICE EXPENSES, AND GENERAL SUPERINTENDENCE	....	9,840 11 4
1. Engineer's salary	3,436 6 0	
2. Allowances of do., including travelling allowances ..	350 0 0	
3. Subordinate Superintendents	3,698 4 0	
4. Allowances of do.	180 0 0	
6. Office expenses	2,176 1 4	
2ND.—MAINTENANCE AND RENEWALS OF PERMANENT WAY ...	....	40,636 0 3
1. Wages	20,147 1 3	
2. Materials	20,488 15 0	
3RD.—REPAIRS OF BRIDGES, ETC.—WAGES AND MATERIALS ...	....	819 6 4
1. Bridges	161 1 0	
2. Miscellaneous, including earthwork, roads, fencing, etc.	658 5 4	
4TH.—REPAIRS OF STATIONS AND BUILDINGS—WAGES AND MATERIALS	....	3,601 0 10
1. Repairs of Buildings of every description, including station yards, signals, etc.	3,126 0 4	
2. Repairs of staff quarters	475 0 6	
6TH.—UNCLASSIFIED EXPENDITURE	....	258 1 4
1. Plantations	105 4 2	
2. Tools and Plant	149 12 2	
3. Miscellaneous	3 1 0	
Total...	....	55,155 4 1

Miles maintained.	Departmentally.	By Contract.	Total.
Railway Line... Double	....	....	....
Railway Line... Single	168	....	168
Sidings	13⅞	....	13⅞
	....	....	181⅞

ABSTRACT B.

Locomotive Expenses.

	RS. A. P.	RS. A. P.
1ST.—GENERAL SUPERINTENDENCE	......	11,117 14 4
1. Salary of Locomotive Superintendent	2,258 3 3	
2. Allowances of do., including travelling allowances ...	218 8 11	
3. Subordinate Superintendents	6,164 13 0	
4. Allowances of do., including travelling allowances ...	4 2 6	
5. Overtime allowances	94 4 4	
6. Office expenses	2,377 14 4	

Locomotive Expenses.—(Concluded.)

	RS. A. P.	RS. A. P.
2ND.—RUNNING EXPENSES	......	17,106 8 8
1. Wages of Drivers and Firemen	13,400 9 0	
2. Overtime and allowances	2,516 9 0	
3. Labour connected with fueling, cleaning, and looking after engines in yards	1,189 6 8	
3RD.—FUEL	......	33,692 11 2
1. Coal ... ... Tons 1,013 Cwts. 15	19,724 2 6	
3. Patent fuel... ... ,, 606 ,, 10	12,063 9 6	
4. Wood ,, ... ,, 381 ,, 18	1,904 15 2	
4TH.—WATER—*Wages and Stores*	......	1,108 15 10
5TH.—OIL, TALLOW AND OTHER STORES EXPENDED ON ENGINES IN WORK	......	1,985 1 1
6TH.—MAINTENANCE AND RENEWALS OF LOCOMOTIVE ENGINES AND MACHINERY...	......	19,507 9 8
1. Wages	4,676 2 8	
2. Overtime	68 3 8	
3. Materials	14,763 3 4	
8TH.—UNCLASSIFIED EXPENDITURE	......	183 0 0
Tools and Plant	183 0 0	
Total...	......	84,701 12 9

ABSTRACT C.

Carriage and Waggon Expenses.

	RS. A. P.	RS. A. P.
1ST.—GENERAL SUPERINTENDENCE	......	1,368 14 8
1. Salary of Superintendent...	343 10 3	
2. Allowances of do., including travelling allowances	16 7 1	
3. Subordinate Superintendents	692 11 9	
4. Allowances of do., including travelling allowances	0 7 11	
5. Overtime allowances	10 6 7	
6. Office expenses	305 3 1	
2ND.—REPAIRS AND RENEWALS OF VEHICLES AND MACHINERY	......	16,583 10 4
Coaching Vehicles—(1).—Wages ... 1,210 11 0; (2).—Overtime ....; (3).—Materials 5,344 15 2	6,555 10 2	
Goods Vehicles—(1).—Wages ... 2,022 12 4; (2).—Overtime 24 13 2; (3).—Materials 7,980 6 8	10,028 0 2	
3RD.—CLEANING CARRIAGES AND WAGGONS AND OILING ...	......	2,240 0 8
1. Labour, including wages of Oilers, Carriage Cleaners, and Examiners	1,293 11 10	
2. Oil, grease, and other stores	946 4 10	
Total...	......	20,192 9 8

ABSTRACT D.
Traffic Expenses.

		RS. A. P.	RS. A. P.
1ST.—SALARIES, WAGES, ETC. ...		......	21,003 13 1
(a).—*General Superintendence*		4,128 6 0	
1. Assistant Traffic Manager	3,000 0 0		
2. Office establishment	552 0 0		
3. Travelling allowances	570 0 0		
4. Contingencies	6 6 0		
(b).—*Station Staff*		14,123 7 1	
1. Station Masters, Clerks, Porters, Gatekeepers at level crossings, etc.		......	
(c).—*Train Staff*		2,752 0 0	
1. Guards and Assistant Guards		......	
2ND.—LIGHTING, GENERAL STORES, ETC.		......	1,136 2 6
1. Lights, general stores, etc., for stations, carriages, offices, etc.,		1,096 1 1	
3. Office and station fittings and furniture ...		40 1 5	
3RD.—CLOTHING		......	763 8 0
4TH.—PRINTING, STATIONERY, AND TICKETS		......	1,425 4 1
6TH.—MISCELLANEOUS EXPENSES		......	246 0 0
7TH.—PAYMENTS TO OTHER LINES		......	7,292 11 6
2. Mileage of foreign stock		1,251 7 3	
3. Expenses at Joint Station (Erode), including rent		6,041 4 3	
Total...		......	31,867 7 2

ABSTRACT E.
General Charges.

				RS. A. P.	RS. A. P.
1ST.—HOME EXPENDITURE				......	11,071 7 3
1-2. Directors, Secretary, Auditors, and Accountants				7,658 2 11	
3. Consulting Engineer and Inspecting Officers' fees and travelling allowances				2,324 10 10	
4. Office expenses				1,088 9 6	
2ND.—SALARIES OF INDIAN MANAGEMENT, INCLUDING OFFICES				......	17,908 12 3
	Salaries. RS. A. P.	Travelling Allowances. RS. A. P.	Contingencies. RS. A. P.		
1. Agent's Office, including Audit and Accounts.	12,391 2 8	0 13 0	57 4 3		
5. Store Dept.	3,256 14 7	12 11 10	......		
6. Medical ,,	1,129 10 10	5 6 4	13 13 4		
Total...	16,777 12 1	18 15 2	71 1 7	16,867 12 10	
8. Contingencies, including furniture and fittings				487 2 8	
9. Stationery				398 15 7	
10. Medicines				154 13 2	

General Charges.—(Concluded.)

	RS. A. P.	RS. A. P.
4th.—Advertising...	......	125 9 0
5th.—Electric Telegraph	......	3,223 9 11
2. Signallers	2,591 8 0	
4. Office expenses and contingencies	478 8 3	
5. Maintenance, wages, and stores	153 9 8	
Total...	......	32,329 6 5

Abstract G.

Special and Miscellaneous Expenses.

	RS. A. P.
1.—Law Charges	11 4 0
2.—Compensation	58 15 0
(1). For goods lost or damaged	....
3.—Rates and Taxes	1,200 1 1
4.—Contribution to Special Funds	5,000 0 0
(1). Fire Insurance Fund	....
Total...	6,270 4 1

Abstract H.

Coaching Traffic.

Ordinary Mileage Fares.	First Class. 18 Pies.		Second Class. 5 Pies.		Third Class. 3 Pies.		Total.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
1st.—Passengers.		RS. A. P.		RS. A. P.		RS. A. P.		RS. A. P.
Single journeys ...	828	4,097 5 0	3,584	4,219 13 0	342,905	1,72,753 2 0	347,317	1,81,070 4 0
Excess fares	46	89 3 0	195	96 0 0	549	258 9 0	790	443 12 0
Return journeys ...	164	597 8 0	3,704	2,396 2 0	59,198	40,604 8 0	63,066	43,598 2 0
Troops and Police ...	3	24 3 0	167	362 3 0	2,162	2,401 10 0	2,332	2,788 0 0
Total...	1,041	4,808 3 0	7,650	7,074 2 0	404,814	2,16,017 13 0	413,505	2,27,900 2 0
Season Ticket...	...	......	1	50 0 0	...	......	1	50 0 0
Total...							...	2,27,950 2 0
2nd.—Passengers' Luggage ... ... Ton Miles...							7,369·69	2,179 4 4
3rd.—Military Baggage ... ... Do. ...							110·94	33 11 0
4th.—Carriages, Horses, and Dogs							...	2,074 5 0
(1).—Carriages ... ... No. 93 Rs. 639 6 0							...	
(2).—Horses ... ... ,, 226 ,, 1,240 1 0							...	
(3).—Dogs ... ... ,, 243 ,, 194 14 0							...	
5th.—Military Carriages, Horses, etc.							...	20 3 0
(1).—Horses ... ... No. 3 Rs. 20 3 0							...	
6th.—Parcels ... ... Ton Miles..							10,930·32	5,352 12 0
8th.—Post Office— ... ... Do. ...							100·03	57 13 9
(3).—Parcels							...	......
Total ...							...	2,37,668 3 1

ABSTRACT I.

Goods Traffic.

——	Rate per Ton per Mile.	Ton Miles.	Amount.	Total.
			RS. A. P.	RS. A. P.
1ST.—MERCHANDIZE, GENERAL ...	....	....	....	1,59,305 0 0
1st Class ...	12 Pies	1,196,799	74,701 8 0	
2nd ,, ...	14 ,,	393,472	28,678 13 0	
3rd ,, ...	18 ,,	174,654	16,819 3 0	
4th ,, ...	24 ,,	62,018	7,894 6 0	
5th ,, ...	36 ,,	24,715	4,946 12 0	
Special ,, ...	8 ,,	646,245	26,264 6 0	
2ND.—MILITARY STORES ...	....	688	....	83 0 0
3RD.—RAILWAY MATERIALS FOR CONSTRUCTION ...	....	33,407	....	2,259 13 0
5TH.—LIVE STOCK ...	....	....	....	237 15 0
Cattle ...	....	243	195 7 0	
Sheep, etc. ...	....	691	42 8 0	
7TH.—RENTS AND DEMURRAGE, WHARFAGE, STORAGE, ETC. ...	....	....	....	570 9 5
Total...	....	....	....	1,62,456 5 5

ABSTRACT K.

Sundries.

		RS. A. P.
Interest on Revenue balances deposited with Government ...		1,170 0 3
Mileage of vehicles over foreign lines ...		1,077 13 8
Rents of dwelling-houses ...		1,862 6 4
Fees on share transfers, etc. ...		685 14 7
Sale of unclaimed and damaged goods ...		107 0 10
Sale of Revenue Stores ...		1,022 0 0
Maintenance ...	650 13 0	
Locomotive ...	156 4 0	
Carriage and Waggon ...	6 15 7	
Traffic ...	86 15 5	
General ...	121 0 0	
Total ...	......	5,925 3 8

Mileage Statement.

	MILES.
Lines owned by Company sanctioned, not commenced...	...
Do. do. under construction ...	...
Do. do. constructed and not worked ...	...
Do. do. do. and worked by Company ...	168
Do. do. do. do. by others...	...
Total...	168
Lines worked by Company—	
Its own ...	168
Foreign ...	...
Total...	168
Foreign lines worked over by Company...	*Nil.*

Statement of Train Mileage.

—	No.	Estimated Locomotive Expenses.
		RS.
Train miles run for Traffic Department	126,544	66,041
Do. for Locomotive do.	......	......
Do. for Maintenance do.	3,920	2,046
Total...	130,464	68,087
	H. M.	
Hours of assisting engines	0 42	7
,, of shunting, piloting, etc.	5,289 55	15,268
,, of miscellaneous services	1,223 25	1,339
Total...	6,514 2	16,614
Total cost...	......	84,701

FORM No. XVI.

GOVERNMENT FORM OF ACCOUNT.

Statement of Net Profits for the half-year ending 31st December 1871.

	RS. A. P.		RS. A. P.	RS. A. P.
To Balance outstanding as per last account	484 12 11	By payments to Treasury during the half-year	3,63,175 15 0	
,, Earnings during the half-year as per Revenue Account	4,08,454 8 0	,, Interest on Revenue balances ...	1,170 0 3	
		,, transfer fees received in England ...	685 14 7	3,65,031 13 10
		Deduct payments made during July and August on account of outstandings belonging to previous half-years	....	18,360 11 0
				3,46,671 2 10
		By traffic earnings paid into Treasury during Jan. and Feb. 1872.	....	62,138 3 0
				4,08,809 5 10
		,, Balance, *i.e.*, earnings unpaid to Government on 1st March 1872.		
		At stations ...	48 4 0	
		Government ...	24 3 1	
		Public Companies and traders ...	57 8 0	
				129 15 1
Total...	4,08,939 4 11	Total...	....	4,08,939 4 11

	RS. A. P.
Traffic receipts paid to Government as per above statement ...	4,08,809 5 10
Deduct working expenses as per Revenue Account...	2,30,516 12 2
Balance being net profits for the six months...	1,78,292 9 8

NEGAPATAM,
5th March 1872.

(Signed) J. SMITH, *Chief Auditor.*

(Signed) W. S. BETTS, *Agent and Traffic Manager.*

(Signed) S. M. JOHNSON, *Assistant Controller.*

(Signed) J. H. M. SHAW-STEWART, Lt.-Col., R.E., *Consulting Engineer for Railways.*

List of Rates and Fares.

Troops and Police—Troops.—Officers on duty pay second-class fare for first-class accommodation, and Non-Commissioned Officers and Soldiers travel second class on payment of the lowest fare.

Police.—Policemen are conveyed on payment of the ordinary fares.

Special Trains.—Special trains are run at a charge of 3 Rupees a mile when consisting of an engine, a carriage, and brake-van only. When more accommodation than this is required, the extra passengers are conveyed at ordinary fares.

Cattle.—Cattle sent singly will be charged for at the rate of 1½ Annas per mile. Sheep in waggon loads of fifty or any less number, and cattle for slaughter in waggon loads of eight or less any number, will be conveyed as under:—

	Per Truck per Mile. RS. A. P.
From 1 to 50 miles	0 2 6
Do. 51 to 100 ,, ...	0 2 3
Do. 101 to 150 ,, ...	0 2 0
Do. 151 miles and upwards	0 1 9

Sheep sent singly are charged for at the rate of 8 Annas for distances not exceeding 50 miles, 1 Rupee for distances from 51 to 100 miles, and 4 Annas additional for every 50 miles or portion of 50 miles above 100 miles. Dealers' horses are conveyed in waggons by "Goods" train at 3 Annas per mile per truck load of five or any less number.

List of Madras Railway rates and distances from Erode Station.

For Goods.

See "Great Southern of India Railway" and "Madras Railway Classification of Goods."

For Parcels.

Distance.	100 lbs. and under.	11 to 20 lbs.	21 to 40 lbs.	41 to 80 lbs.	81 to 100 lbs.	101 to 125 lbs.	126 to 150 lbs.	151 to 200 lbs.	201 to 250 lbs.
	RS. A.	RS. A.	RS. A.	RS. A.	RS. A	RS. A.	RS. A.	RS. A.	RS. A.
1 to 50 miles	0 4	0 6	0 8	0 12	1 2	1 8	1 14	2 4	2 10
51 to 100 ,, ...	0 6	0 9	0 12	1 2	1 10	2 2	2 10	3 2	3 10
101 to 150 ,, ...	0 8	0 12	1 0	1 8	2 2	2 12	3 6	4 0	4 10
151 to 200 ,, ...	0 10	0 15	1 4	1 14	2 10	3 6	4 2	4 14	5 10
201 to 250 ,, ...	0 12	1 2	1 8	2 4	3 2	4 0	4 14	5 12	6 10
251 to 300 ,, ...	0 14	1 5	1 12	2 10	3 10	4 10	5 10	6 10	7 10
301 to 350 ,, ...	1 0	1 8	2 0	3 0	4 2	5 4	6 6	7 8	8 10
351 to 400 ,, ...	1 2	1 11	2 4	3 6	4 10	5 14	7 2	8 6	9 10

For Ice, Fish, Meat, and Vegetables.

Distance.	10 lbs. and under.	11 to 20 lbs.	21 to 40 lbs.	41 to 80 lbs.	81 to 100 lbs.	101 to 125 lbs.	126 to 150 lbs.	151 to 200 lbs.	201 to 250 lbs.
	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.
1 to 50 miles	0 3	0 5	0 6	0 9	0 12	0 15	1 2	1 8	2 0
51 to 100 ,, ...	0 5	0 6	0 8	0 12	0 15	1 2	1 5	1 14	2 7
101 to 200 ,, ...	0 8	0 9	0 12	1 2	1 4	1 7	1 10	2 7	3 0
201 to 300 ,, ...	0 9	0 12	0 15	1 5	1 8	1 11	1 14	3 0	3 11
301 to 400 ,, ...	0 11	0 15	1 2	1 8	1 13	2 0	2 2	3 9	4 4

Packages weighing more than 250 lbs. to be charged for in proportion to the rates for 250 lbs.

For Passengers' Luggage.

First Class	82 lbs. free.
Second „	25 „ „
Third „	15 „ „

All luggage in excess of these quantities (whether in the owner's charge or not) 2 Pies per 82 lbs. per mile.

For Horses, Carriages, and Dogs.

1 Horse	1½ Annas per mile.
2 Horses (if one property)	2¼ „ per „
3 Horses (do.)	3 „ per „
Four-wheeled carriage	2½ „ per „
Two „ „	1½ „ per „
Palanquin „	1 „ per „

Dogs.

	RS.	A.	P.	
1 to 50 miles	0	8	0	each.
51 to 100 „	1	0	0	„
101 to 150 „	1	4	0	„
151 to 200 „	1	8	0	„
201 to 250 „	1	12	0	„
251 to 300 „	2	0	0	„
301 to 350 „	2	4	0	„
351 to 400 „	2	8	0	„

No. 16. ORDER THEREON, 3rd September 1872, No. 2,087.

RAILWAY, No. 4.

ORDERED that these papers be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 17. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 3rd September 1872, No. 2,088.

RAILWAY, No. 5.

SIR,—I am directed by His Excellency the Governor in Council to forward the Revenue Account and Analysis of the traffic operations of the Great Southern of India Railway for the half-year ending 31st December 1871.

2. It will be observed from the Consulting Engineer's letter that, owing to a number of references that had to be made to the Agent, these papers could not be submitted earlier. I am also directed to solicit instructions on the several points noticed by Lieutenant-Colonel Shaw-Stewart.

Read the following papers :—

No. 18. From the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 18th July 1872, No. 87.

1 Plan.
1 Estimate No. 7, Rupees 1,600.
1 Letter No. 2,755, dated 15th July 1872, from the Commissary General, to the Secretary to Government, Department Public Works.
1 List of new buildings required for the Commissariat Department in Malabar.

I HAVE the honour to forward, for sanction and provision of funds, when available, a plan and an estimate, amounting to Rupees 1,600, for constructing a Malt Liquor Godown at Malliapoorum, in the Malabar District.

2. The necessity for the work is duly explained by the Commissary General at Madras in his letter to your address, No. 2,755, dated 15th July 1872, herewith forwarded.

From the Acting Commissary General, to the Secretary to Government, Public Works Department (through the Superintending Engineer, 7th Division, Coimbatore), dated Madras, 15th July 1872, No. 2,755.

I HAVE the honour to represent that a new Malt Liquor Godown is very much wanted at Malliapoorum, the building now in use being badly situated, confined and hot, to which is ascribed the loss from malt liquor going bad, and the prevalence of the borer.

2. Since November 1870, I find that thirteen hogsheads of Ale and eleven of Porter have been condemned at that station, and at this time two of the former and twelve of the latter are awaiting submission to a Committee.

3. This is a very large quantity to go bad out of a supply required to be maintained to meet a monthly consumption of nine hogsheads.

4. From the above circumstances it is very desirable that a new godown, on a suitable site, should be constructed as soon as possible, and I submit herewith a plan of a godown estimated to cost 1,600 Rupees, and I beg strongly to recommend that its construction should be proceeded with at an early date.

RETURNED to the Superintending Engineer, 7th Division, with a view to the approval of His Excellency the Commander-in-Chief being obtained in accordance with paragraph 77, Chapter V. of the Madras Code.

1st August 1872. (Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 19. From the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Erode, 14th August 1872, No. 109.

WITH reference to your endorsement on my letter No. 87, dated 18th July 1872, herewith returned, I have the honour to re-submit the papers alluded to in the above letter, and to state that they have been submitted to, and duly approved by, His Excellency the Commander-in-Chief.

No. 20. ORDER THEREON, 3rd September 1872, No. 2,089.

MILITARY WORKS, No. 2.

THE Governor in Council sanctions the estimate of Rupees 1,600 for the construction of a Malt Liquor Godown at

Malliapoorum in the Malabar District. No reserve funds being available, reference will be made to the Military Department to ascertain if any transfer is feasible for provision of the amount urgently required.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 21. From the Acting Superintending Engineer, 1st Division, to the Chief Engineer for Irrigation, dated Dowlaishweram, 8th August 1872, No. 1,744.

I REGRET having to report a serious breach in the river bank on the Coringa canal, about one mile below the head-sluices on the Dowlaishweram side, near the site where the channel to the Kalapulunka lock takes off; this is the point to which I particularly drew your attention during your late tour of inspection, and which I had provided to avoid in the bank canal estimates for the eastern delta.

2. I was absent from head-quarters with the Assistant Engineer, who is preparing the Unnamoolunkah project, when this accident occurred; but Mr. Martin, the Assistant Engineer in charge at head-quarters, took active measures to make all necessary arrangements for progressing with the work, and he was soon after joined by Captain Mead, and on my return I am glad to be able to report that, notwithstanding the very serious nature of the accident, the measures adopted by these officers promise to be quite successful.

3. The river has been in unusually heavy freshes all through July, and the bank appears to have been thoroughly saturated at this place, where a leak always existed when the river rose to six or seven feet on the anicut. This had been observed for many years, but there was no indication of any sliding in the bank; this season, however, as the river fell to about four feet on the anicut, the whole front slope slipt in at once without any warning, apparently at night time, and it is easy to see the cause now, for the river bank here has strata of sand running right through it; these allowed the river water to percolate into the Coringa canal, but as soon as the freshes subsided and the pressure of water against the river bank was removed, the waters flowed back from the canal into the river taking away the soil with them. To avoid this danger I proposed to alter the line of the bank canal and take it more inland, and as I believe you have recommended this measure to Government for sanction, I would beg to urge its being adopted at once.

4. I enclose a sketch of the breach which will show how extensive it is, for some distance above and below there is nothing to spare in the way of lunkah land, and we are, therefore, liable to have accidents of this kind at any moment. I had examined this very point just before going out into the district and then there was no indication of any slip.

5. To-day the water is 3′ 3″ on the Dowlaishweram anicut and 3′ 6″ on the Vejaishweram side; the weather is unsettled, but I am in hopes the freshes will not be down again for a week at least, by then I trust this point will have been secured.

No. 166.

No. 22. *Note by the Acting Chief Engineer for Irrigation.*

In a telegram dated 17th instant, Lieutenant-Colonel J. F. Fischer has reported that the breach has been closed, that a heavy flood has just passed down the river, and that the weather is clearing.

1 Letter No. 1,744, from Superintending Engineer, 1st Division.
1 Enclosure of the above.
1 Telegram dated 17th August 1872.

2. In paragraph 36 of my Note No. 87, dated 3rd June, I advocated the abandonment of the portion of the Coringa canal in the neighbourhood of the spot at which the breach has occurred, and the Government in their Order No. 1,786, dated 26th July, approved of my suggestions relative to the Coringa and West Bank canals. The estimates for these works should be submitted with the least possible delay.

Ootacamund, 21st August 1872. (Signed) R. F. OAKES, Captain, R.E., *Acting Chief Engineer for Irrigation.*

No. 23. Order thereon, 3rd September 1872, No. 2,090.

IRRIGATION, No. 1.

Ordered to be recorded.

2. The Superintending Engineer of the 1st Division will expedite the submission of the estimates alluded to.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 24. Read the following Proceedings of the Government of India, Public Works Department (Account—Railway), dated Simla, 10th August 1872, Nos. 1,020-26 A. R. :—

Government Accounts of Guaranteed Railway transactions.

Read again—

Public Works	Department	Resolution	Nos. 173—8 A—R,	dated 11th March	1871.
Financial	,,	,,	No. 898,	,, 2nd February	1872.
Public Works	,,	,,	Nos. 242—8 A—R,	,, 26th ,,	,,
,, ,,	,,	,,	,, 320—5 A—R,	,, 11th March	,,
,, ,,	,,	,,	,, 460—5 A—R,	,, 2nd April	,,
,, ,,	,,	,,	,, 408—13A—R,	,, 23rd March	,,
,, ,,	,,	,,	,, 738—43A—R,	,, 3rd June	,,
,, ,,	,,	,,	,, 814—19A—R,	,, 21st ,,	,,
,, ,,	,,	,,	,, 830—35A—R,	,, 26th ,,	,,
,, ,,	,,	,,	,, 849—53A—R,	,, 1st July	,,

Resolution.—It having after consideration in the Financial and Public Works Departments been decided in supersession of previous arrangements that the accounts of all the Indian Guaranteed Railways shall be concentrated and kept in the office of the Comptroller-General of Accounts, and that all adjustments shall be made

by that officer upon advices from the Accountant-General, Public Works Department, the Governor-General in Council is pleased to direct, in view to the decision on these points being acted up to, that the Government Examiner's books of Guaranteed Railway transactions for the period commencing 1st January 1872 shall be kept in strict accordance with the rules laid down in the accompanying memorandum, and that the returns therein prescribed shall be regularly and punctually furnished to the civil account officers concerned and the Accountant-General in this department.

ORDER.—Ordered that this Resolution (and enclosure) be communicated to the Local Governments and Officers named in the margin for information and guidance.

Government of Madras.
,, of Bombay.
Consulting Engineer, Calcutta.
,, ,, Lahore.
,, ,, Lucknow.
Accountant-General, Public Works Department.

Ordered also that a copy be forwarded to the Financial Department for information.

(Signed) P. P. O'CONNELL, Lieut.-Colonel, R.E.,
Offg. Deputy Secy. to the Govt. of India.

No. 25. ORDER THEREON, 3rd September 1872, No. 2,091.

RAILWAY, No. 6.

COMMUNICATED to the Consulting Engineer and to the Examiner of Railway Accounts for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 26. Read the following letter from the Secretary to the Government of India, Public Works Department (Account—General), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 19th August 1872, No. 733-A.G. :—

I AM directed to acknowledge receipt of your letter No. 302, dated the 31st January, recommending that Mr. Chisholm, Consulting Architect to the Government of Madras, may be allowed to draw the travelling allowance of Superintending Engineer, namely, Rupees 6 per day, that officer having hitherto, since his appointment to the above post, drawn the travelling allowance of an Executive Engineer.

2. In reply I am to observe that the Government of India, in November 1868, agreed to the proposal of the Madras Government to make Mr. Chisholm's

salary, as Consulting Architect to that Government, special wholly in consequence of its having* been urged that his pay as an Executive Engineer fell short of the emoluments which an Architect in the ordinary course of professional arrangements would receive under similar circumstances. His duties, however, are not those of a Superintending Engineer, and it does not appear that there are sufficient grounds for increasing his travelling allowance.

* Letter from the Government of Madras, No. 3,083, dated 1st October 1868.

No. 27. ORDER THEREON, 3rd September 1872, No. 2,092.

ESTABLISHMENT, No. 1.

COMMUNICATED to the Consulting Architect and Controller of Public Works Accounts.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 28. Read the following letter from the Secretary to the Government of India, Public Works Department (Account—Railway), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 16th August 1872, No. 1,080 A. R. :—

I AM directed to acknowledge the receipt of your docket No. 1,660 of the 10th ultimo, forwarding a schedule of works proposed for execution on the section of the North-West Line of the Madras Railway open for less than two years, and to observe that, as the specific works on which outlay is to be incurred are not entered in the schedule, the Government of India desire that, if this has not already been done, the works remaining to complete the line so far as at present determined may be separately entered in a schedule in such a way as to enable the Consulting Engineer to exercise, under the orders of the Government of Madras, a practically effective control over the expenditure on each time. A copy of such schedule should be sent forward to the Government of India for information.

2. The document received with your letter under reply is a schedule of expenditure to be incurred on works to be done on districts and stations, while what is wanted is a detailed schedule of works remaining to complete the line.

No. 29. ORDER THEREON, 3rd September 1872, No. 2,093.

RAILWAY, No. 7.

COMMUNICATED to the Consulting Engineer for Railways, who will submit the list of works referred to in the concluding part of the letter from the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 30. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department (Railway), to the Secretary to the Government of Madras, Public Works Department (Railway), dated Simla, 17th August 1872, No. 1,199 R. :—

With reference to paragraph 4 of Public Works Department letter No. 1,008 S. R., dated the 25th July 1872, and subsequent telegram, dated the 13th August, requesting the transfer to the Resident at Hyderabad on account of the Nizam's (State) Railway of the 87 miles of rails belonging to the Great Southern of India Railway Company to be delivered at Wuddi, I am now directed to convey the sanction of the Governor-General in Council to the transmission to Her Majesty's Government of Indent No. 1 for 226.88 miles of light permanent-way materials for the Great Southern of India Railway Extensions, received with your letter No. 1,592, dated the 2nd July 1872, and to request that a list may be furnished of the surplus materials, such as pot sleepers, tie-bars, gibs and cotters, etc., in store at Negapatam, after the transfer to the Nizam's Government has been effected.

No. 31. Order thereon, 3rd September 1872, No. 2,094.

RAILWAY, No. 8.

Communicated to the Consulting Engineer for Railways, with reference to G. O. No. 1,591, dated 2nd July 1872. Lieutenant-Colonel Shaw-Stewart will submit the list of surplus materials required by the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 32. Read the following letter from the Special Executive Engineer, Wynaad, to the Secretary to Government, Public Works Department, dated Vythery, 22nd August 1872, No. 377 :—

In G. O. No. 1,895, dated 10th instant, no mention is made with reference to Office Establishments for Wynaad, and as no Draughtsman is required for the North Wynaad Range, it will make but little difference in cost to continue the establishments as they now stand, with the exception of that of South-East Wynaad (transferred to the West Coast canal), until expiration of period during which the district is to remain an independent charge.

2. A second-class range establishment, besides reducing the salaries of all the present incumbents, would be quite inadequate to carry on the work of my office, even if the contingency of sickness were left out of the question.

3. With the exception of my Head Clerk, Mr. F. J. Jacques, whose permanent appointment is Accountant of South-East Wynaad Range (but who will not, I hope, be removed except for promotion), none of the members of my office belong to the permanent strength of the department; they have, however, done their duty well, and should they continue in employ I trust that a hope will be held out to

them of their past service being reckoned to their benefit when the time comes for re-constructing the district in accordance with the arrangement now deferred till end of next official year if only as an encouragement.

No. 33. ORDER THEREON, 4th September 1872, No. 2,095.

ESTABLISHMENT, No. 2.

THERE are two second-class Range Establishments available for Wynaad Ranges as re-constituted under G. Os. Nos. 1,586 of 1st July and 1,895 of 10th August. The strength of each is—

	RS.
1 Accountant	50
1 Draughtsman	40
1 Clerk	25
3 Lascars	21
1 Range ...	136
	2
For 2 Ranges ...	272

2. As Major Kennedy is of opinion that the Draughtsman may at present be dispensed with in North Wynaad Range, he is at liberty to add his salary to that of South Wynaad Range, when the establishment under his immediate orders will consist of—

	RS.
1 Accountant	80
1 Draughtsman	50
1 Clerk	25
3 Lascars	21
Total ...	176

3. It is absolutely necessary that a commencement be made of reducing the excessive cost of Wynaad establishments, and the salaries above noted, when increased by the Wynaad allowances of 50 per cent., are, in the opinion of His Excellency the Governor in Council, amply sufficient. The Governor in Council observes that one of the conditions on which Major Kennedy urges the continuance of Wynaad under his special charge was that his exceptional office establishment should be done away with and an ordinary establishment allowed him.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 34. Read the following Endorsement of the Officiating Deputy Consulting Engineer for Railways, dated Madras, 21st August 1872, No. 437 :—

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 19th August 1872, No. 597.

WITH reference to my letter No. 538 of the 31st ultimo, I have the honour to forward herewith a list of open capital sanctions of the Traffic Department for the quarter ending the 30th of September 1872, countersigned by the Government Examiner.

List of open sanctions for quarter ending 30th September 1872.

Authority.	Works.	Sanctioned Expenditure. 1 Indian.	2 English.	3 Total.	Expenditure as per Auditor's books up to 30th June 1872. 4 Indian.	5 English.	6 Total.	Date on which sanction closes.	Remarks.
		RS. A. P.	RS. A. P.	RS. A. P.	RS.	RS.	RS.		
G. O. No. 1,194, dated 10th May 1872.	Furnishing Raichore Station.	277 11 4	5,295 1 10	5,572 13 2	...	3,918	3,918	One year from date of sanction.	30th June 1873.
Do. do. do. ...	Do. Tirupetty R. Room	2 5 0	434 10 11	436 15 11	...	381	381	Do.	Do.
Do. do. do. ...	Do. Adoni do.	10 15 8	388 4 2	399 3 10	...	295	295	Do.	Do.
G. O. No. 1,488, dated 17th June 1872.	1,000 Tarpaulins ...	1,785 0 0	42,315 0 0	44,100 0 0	...	...	...	Two years from date of sanction.	30th June 1874.
C. E. No. 600, dated 29th July 1872.	Do. Toongabudra Station.	25 9 6	450 3 3	475 12 9	...	427	427	One year after date of sanction.	30th Sept. 1873.
Do. No. 601 do. ...	Do. Bellary Staff Bungalow.	74 13 0	1,328 15 1	1,403 12 1	...	1,000	1,000	Do.	Do.

Madras,
15*th August* 1872.

(Signed) L. S. MOSS,
Deputy Traffic Manager.

(Signed) F. CHURCH,
Chief Auditor.

(Signed) C. M. MOBERLY, Captain,
Examiner of Railway Accounts.

(Signed) R. B. ELWIN,
Agent and Manager.

Submitted to Government in continuation of this office letter No. 401, dated 1st August 1872.

(Signed) R. THOMPSON, Captain, R.E.,
Offg. Dy. Consulting Engineer for Railways.

No. 35. Order thereon, 4th September 1872, No. 2,096.

RAILWAY, No. 9.

Ordered that the list submitted with this letter be forwarded to the Government of India, with reference to their Proceedings No. 656 A.R., dated 10th May 1872.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 36. DOCKET No. 2,097, dated 4th September 1872.

COPY of the above forwarded to the Government of India in continuation of docket No. 1,954, dated 16th August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 37. Read the following letter from the Officiating Deputy Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 24th August 1872, No. 440 :—

WITH reference to the Order of Government, No. 1,711, dated 17th ultimo, and letter* from Government of India embodied therein, I have the honour to transmit a tracing of the invalid carriage recently sanctioned by Government.

* No. 960 G. R., dated 28th June 1872.

No. 38. ORDER THEREON, 4th September 1872, No. 2,098.

RAILWAY, No. 10.

ORDERED that the tracing received with this letter be forwarded to the Government of India with an intimation that the invalid carriage recently sanctioned for the Madras Railway is the only vehicle of the description referred to in memorandum from that Government, dated 28th June 1872, No. 960 G. R., which has been adopted in this Presidency.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 39. (DOCKET No. 2,099, dated 4th September 1872.)

COPY of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 40. Read the following letter from the Secretary to the Government of India, Public Works Department (Account—Railway), to the Secretary to the Government of Madras, Public Works Department (Railway Branch), dated Simla, 19th August 1872, No. 1,089 A. R. :—

IN conveying the approval of the Government of India to the rules* proposed for the regulation of the accounts of expenditure incurred on the Southern Extension of the Great Southern of

* Copy received with Madras Government docket No. 1,646 of the 8th July 1872.

India Railway while under construction, I am directed to add that it is presumed that the prices shown in the price lists alluded to in paragraph 17 of the rules in question will be based upon the actual values of the articles as shown by the stores ledgers, and I am to suggest that the balances shown against the open accounts mentioned in paragraph 13 should be checked and verified at least once a year, the amount expended on cartage being finally charged off to the heads concerned, and the balances against the other three† accounts being tested by actual stock-taking and valuation.

†Chunam burning, brick-making, and quarrying.

No 41. ORDER THEREON, 4th September 1872, No. 2,100.

RAILWAY, No. 11.

COMMUNICATED to the Consulting Engineer for Railways and Examiner of Railway Accounts for guidance. It should be understood that the approval of the Government of India to the method of account proposed is granted conditionally on the carrying out of the suggestion contained in this letter.

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

No. 42. Read the following Proceedings of the Board of Revenue:—

Andyapanúr Tank in Salem District.—Letters from Collector and Head-Assistant Collector questioning advantage of undertaking restoration of—submitted to Government, and proposed restoration recommended to be abandoned for present at least.

(Here enter No. 1,623, dated 19th August 1872.)

No. 43. ORDER THEREON, 4th September 1872, No. 2,101.

IRRIGATION, No. 2.

THE project for restoring the Andyapanúr Emam Saib Tank will be abandoned. Communicated to the Superintending Engineer of the 5th Division, with reference to G. O. No. 249, dated 25th January 1872.

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

No. 44. Read the following despatch from the Right Honourable the Secretary of State for India, (Public Works,) to His Excellency the Right Honourable the Governor in Council, Fort St. George, dated India Office, London, 11th July 1872, No. 12 :—

I HAVE forwarded per book-post ten copies of each of the under-mentioned publications, and I request that they may be circulated among the officers of the Public Works and Survey Departments of your Presidency, namely :—

Report by Major G. A. Laughton on the working of an instrument called the Omnimeter.

Memorandum on Eckhold's Omnimeter by Lieutenant-Colonel Strange, F.R.S.

Description of Eckhold's Omnimeter by the inventor.

2. The copies have been addressed to the Secretary, Public Works Department, Madras.

ECKHOLD'S OMNIMETER.

THIS instrument is intended, as its name denotes, to effect several operations, as measuring the bases of triangulation, measuring distances either inclined or horizontal, measuring altitudes, and measuring angles.

Description.

The instrument consists of the following parts :—

1. Of a graduated circle, to read off each ten seconds in the measurement of horizonta angles.
2. Of a powerful telescope, revolving in a plane perpendicular to the graduated circle.
3. Of a microscope, of high power, connected with the telescope and moving with it.
4. Of a highly sensitive level lying upon — .
5. Of a rule, or plane, having a fixed length (of 20 centimetres, for example).
6. *Of a scale fixed vertically at the extremity of the said rule, at a distance coincident with the optical axis of the microscope, which scale is divided into half *millimetres* (the millimetres are indicated by the numbers between 1 and 100).
7. Of a micrometrical screw movement connected with the base of the scale and giving the $\frac{2}{10000}$ of a millimetre of the scale, legible on the graduated circle beneath.
8. Of a second extremely sensitive level, capable of being applied to the telescope and determining, in case of need, its horizontality.

Further, of all the necessary screws, keys, and other matters required to secure the efficient working of the instrument.

As the necessary complement of the omnimeter, there is a levelling staff (*see* fig. 2), not divided, but of an invariable length (as, for example, three metres), which length is defined by two white lines on a ground of black, one at the upper extremity and the other at the lower extremity of the staff, as m, m'.

Mode of Operation.

Before going into more ample details regarding the instrument, it may be as well, in order to show the way of working with it and the advantages to be obtained by its use, to take an example.

Supposing, then, that we require to ascertain the distance between any two points—

---

* This description refers to the original French form of the instrument; the straight graduated scale is, now, in the English pattern, horizontal not vertical.

The first thing is to place the levelling staff at one of the points (in this as in all geodesical operations, the staff must, of course, be held in a true vertical position).

We then take the omnimeter to the other point, and set it up. By means of the level (4), and its screw adjustment, we place the instrument in a horizontal plane.

Then directing the telescope upon the upper white line *m* of the staff, we fix the telescope (with the screw for that purpose).

We read off on the scale, by means of the microscope, the inclination of the telescope.

On account of the figures being magnified by the microscope, we shall be able to see only one number at a time of the 100 integrals of the scale; suppose we find the number 67 (millimetres) *plus* the unascertained fraction comprised between that number and the horizontal thread of the microscope. We will ascertain the fraction exactly, by means of the micrometer; say, in our example, that it reads as 2,035 on the circle of the micrometer.

This we note down in our book to the right of the number 67 already obtained, thus 672035

We repeat this operation in every particular for the line *m'* (the lower one) of the staff, and we obtain, say 609400

The operation with the instrument is now complete, as we are in possession of the data required for calculating the distances. Let us take the difference between these two quantities 62635

and divide 6000000, a constant number for all cases, by the difference we have thus obtained, and we shall have $95^m.79$ as the horizontal distance in question.

In fact, let us (fig. 1) suppose the levelling staff in position at *mm'*, let O be the point round which the telescope revolves, AB representing the difference as found = 62635.

From the point O let us draw a horizontal line; let us produce the line AB to H, and the line *mm'* to D. We have then AB and *mm'* perpendicular to OD.

In the similar triangles OAH and O*m*D we have the following proportion—

$$\frac{OH}{AB} = \frac{OD}{mm'}, \text{ therefore } OD = \frac{OH \times mm'}{AB};$$

But $OH = 0^m.20$ (by the construction of the instrument).

$mm' = 3^m.00$ (the invariable length of the staff).

AB=62635 (the quantity obtained in our example by the scale).

The last quantity in fractions of the metre is $0^m.0062635$: if we substitute for the letters their respective values, we have:

$$OD = \frac{0^m.20 \times 3}{0^m.0062635} = \frac{0^m.60}{0^m.0062635} = \frac{6000000}{62635} = 95^m.79.$$

In the preceding example, we have supposed the staff to be placed at one point and the omnimeter at the other. This manner of operating is not, however, the only one; there are two others, one by placing the omnimeter in line with the two points; the other, by fixing it at some point outside. In either case, a staff must be set up at each of the points. In the first instance, the total distance is obtained directly by adding together the back and foresights. In the second instance, we obtain the distance by measuring the horizontal angle, which we read off on the great circle, and by calculating the triangle (trigonometrically) by means of the angle thus obtained and the two sides.

For the establishment of a base of triangulation, the latter mode is that which we should recommend for adoption; for, if we proceed thus by small distances from 10 to 20 metres on each side, or thereabouts, we may easily measure a base line of 1,000 metres within an approximation of $0^m.004$—a result which is quite satisfactory.

In fact, if for a distance of 10 metres the scale gives us the difference $0^m.06$, it will give us for a distance equal to $9^m.99996$ the difference $0^m.0600002$, a quantity appreciable on the circle of the micrometer.

The nature of this operation requiring extreme exactness, a staff of special construction should be employed. This staff would have the two faces similar to those already described, would be provided with supports to ensure its verticality, and, at its base, would be armed with a steel point and iron tressles.

As regards the measurement of the slope or the inclined distance, the operation requires, further, the reading off of the horizontal line on the scale.

We have, then (fig. 2), a new proportion :—

$$\frac{AB}{BH} = \frac{mm'}{m'D}, \text{ and } m'D = \frac{mm' \times BH}{AB},$$

consequently $$Om' = \sqrt[2]{(m'D^2 + OD^2)}.$$

General Observation.—The practice of the omnimeter has proved to us that in the measurement of lengths requiring extreme accuracy, it is not prudent to make the points more than 200 metres apart. At that distance we are within an approximation of $0^m.04$; at 500 metres, by making use of a staff of four metres high, the approximation would be within $0^m.17$—a sufficiently satisfactory result, as, by one forward and one back sight, we can determine a kilometre within $0^m.34$. With the chain we know as a fact that it is hardly possible to come nearer than within a mean of $\frac{1}{700}$ of difference.

In levelling, the operation is identical with that we have described for the measurement of inclined distances. The quantity is given by the formula (see fig. 2) $m'D = \frac{mm' \times BH}{AB}$, that is, three (metres) multiplied by the difference of the sights, divided by the difference with the horizontal line.

The readings are obtained with the greatest precision. For distances not exceeding 100 metres, they are obtained within a fraction of a millimetre; and for greater distances (*at which the instruments at present in use are inoperative*) the measurement can be obtained within a millimetre.

This degree of precision is attained because—

1. In placing the instrument, we have not to pay attention to centralizing the optical axis.
2. Because the operator has always to point his telescope on the same lines of the staff, which lines denote an invariable length, namely, three metres.
3. Because there can be no hesitation in reading the staff as with the ordinary levelling staves, with which we have an element of guess-work not found here.

In difficult and hilly ground, levelling with the ordinary levels becomes a very long and expensive operation, because the sights are necessarily short, and because the number of them is multiplied in proportion to the rapidity of the incline. The omnimeter, as may be perceived at once from the nature of the instrument, allows of levelling points placed at great distances apart, and which make considerable angles with the horizon. Merely considered as a level, it offers a considerable advantage over the instruments hitherto in use.

The omnimeter is calculated, therefore, to effect an important improvement, combining as it does in one instrument the theodolite and the level, doing away with the necessity for tedious chain measurements, and requiring in its operation no complicated calculations.

Memorandum on ECKHOLD'S "Omnimeter" by Lieutenant-Colonel A. STRANGE, F.R.S., Inspector of Scientific Instruments, India Store Department.

As the new instrument named the "Omnimeter" has attracted some notice amongst Indian Surveyors, I think it desirable to state my opinions on certain points connected with it, with a view of ascertaining whether it still admits of improvement, and if so in what direction. With this view, I beg to recommend that this memorandum, Major Laughton's report, to which it will frequently refer, and the inventor, M. Eckhold's, description of the instrument (*appended*) be printed and circulated to the Public Works and Survey Departments in the three Presidencies.

2. The invention under notice was brought to me by its author, M. Eckhold, about three years ago. I made a very careful examination of it, and came to the conclusion that the principle was sound, and that, if properly applied, it was calculated to effect a considerable saving of both time and money in those surveys in which chain measurements have hitherto been employed, and in levelling operations.

3. But the individual instrument of French manufacture, submitted to me by M. Eckhold, was very badly designed. I need not here describe its defects, but they were such that I declined to recommend the trial in India of the principle in that shape. I had many conferences with M. Eckhold on the subject, and explained to him the modifications in the form of the instrument which would be necessary in order to give its principle fair play. After a good deal of delay and several alterations, Messrs. Elliott Brothers produced an instrument in which my instructions were to some extent carried out, and it was this instrument, modified under my advice, which Major Laughton saw when he was in England, and justly considered worthy of trial. He anticipated my intention of recommending that it should be tried, and some private correspondence on the subject passed between us. On only one point did I express a doubt regarding the practical efficiency of the instrument, namely, that, as its successful use depends mainly on the manipulation of a very delicate micrometer screw for determining exceedingly minute linear quantities, I did not feel sure that the persons ordinarily employed in the Public Works Department on levelling works and in the Revenue minor detail surveys would prove sufficiently trained to fastidious refinement of observation to do justice to such an appliance. I had no doubt that in Major Laughton's hands the instrument might succeed, but I very much feared it might fail in the hands of his less refined subordinates. It is true that the instrument is getting largely into use on the Continent, but it is notorious that subordinate surveyors are more highly educated abroad than with us.

4. Major Laughton's report on the instrument after trial is in some respects favourable. But he does not mention by whom it was used, and until more is known on that point I think it my duty to repeat the above caution.

5. The three principal operations for performing which this instrument professes to have advantages over the ordinary methods are (1) the measurement of heights; (2), levelling; (3), the measurement of linear distances.

6. Major Laughton states (paragraph 17) that for measuring heights the instrument is "exceedingly accurate," and (paragraph 19) that in levelling it is "wonderfully accurate." I shall therefore take those two points as settled, and confine my remarks to the third, namely, its accuracy as a distance measurer.

7. Many attempts to dispense with direct chain measurements by means of instrumental micrometers or scales of various kinds have been made at different times. The omnimeter is the best arrangement of this kind with which I have met; but it must not be forgotten what are the unavoidable mathematical conditions of the problem in question, namely, to employ an "ill-conditioned triangle" of a very extreme kind. No method of determining a distance is known in which a measured base line can be dispensed with (except the very uncertain one founded on the velocity of sound). In the omnimeter method this measured base is a staff of from 2 to 4 metres long, and is therefore very short compared with the distance to be measured. This unfavourable condition is sought to be counteracted by introducing a finely divided scale and delicate micrometer, which are the distinguishing features of the instrument, which is equivalent in point of fact to an instrument having a vertical circle of about 6 inches radius read off by one micrometer microscope in the usual way. The substitution of a straight scale for a circle, by introducing the principle of "similar triangles," simplifies the computation, but does not confer greater accuracy than that attainable with the circle; but it must never be lost sight of that the method, whether a circle or a straight scale be employed, is subject to the fundamental disadvantage above pointed out.

8. Major Laughton states (paragraph 31), "The difference between the observations of two persons amounted in some instances to ·00005; but this is a most serious difference, for the difference of ·00001 in 600 feet is equal to an error of 3 inches, at 1200 = to 1 foot; in other

words the error increases according to the square of the difference between the distances, consequently, should the difference between two observations amount to ·00005, this would equal 5 feet at 1,200 yards—a most serious error."

9. The discrepancy between two persons here spoken of evidently means the discrepancy between their micrometer readings. Major Laughton describes this discrepancy (of ·00005 in a single reading) to want of delicacy in the straight scale, and insufficiency of sub-division in the circular micrometer head, and he proposes modifications in these parts, by means of which he expects to render readings made by different observers more accordant.

10. In this expectation I fear he will be disappointed for the following reason :—The celebrated Troughton laid down the dictum that no smaller quantity can be measured by a given instrument than that which can be seen in its telescope. This, of course, applies equally to a microscope used for measurement. The dictum is based on sound sense, and has never been controverted. Numerous experiments which I have made on the subject satisfy me of its substantial correctness.

11. What, then, is the smallest quantity visible in the microscope of the omnimeter. I have, since the receipt of Major Laughton's Report, examined one now under construction by Messrs. Elliott. I placed before the microscope a set of "Nobert's Test Lines," which are remarkably fine lines, cut on glass made expressly to test microscopes. The coarsest set of lines were 12,000 per inch. The microscope was totally unable to show these as separate lines. I then tried a scale on glass (made for another purpose) which had 2,500 lines per inch. The microscope resolved these perfectly, and I estimated that it would have shown lines of twice that fineness, namely, 5,000 per inch. This, I think, is about the smallest quantity the microscope will show with certainty. Let us compare this with the scale and micrometer head. The scale is divided to half millimetres, and one division = 0·01969 inch, say, 0·02 inch, or $\frac{1}{50}$th of an inch. To sub-divide this, the micrometer head has 500 divisions. A single division of the micrometer = $\frac{1}{500}$th of $\frac{1}{50}$th of an inch, which is equal to the $\frac{1}{25000}$th of an inch. This quantity being five times smaller than the smallest above found to be visible in the microscope, I foresee no advantage from increasing the delicacy of the indicating appliances, which already so much exceed that of the microscope.

12. Hence it would appear that the microscope itself needs greater optical power. And this can be done by diminishing the focal length of its object glass. But this will bring the object glass nearer the scale, and as this, being an opaque object, is viewed by direct, not transmitted, light, there is a limit to this source of power. The limit has been reached in the microscopes used for reading off large circles. Those of the great theodolite, designed by me for the Great Trigonometrical Survey of India, afford an example. They are brought as near to the circle as illuminating exigencies admit. They indicate, under average circumstances, with certainty about 0·5″ (half a second of arc). This angular quantity on the circle in question (3 feet diameter) is = 0·0000436 in., or about $\frac{1}{25000}$ (one twenty-five thousandth) of an inch. The present delicacy of the indicating appliances of the omnimeter is thus already equal to that of such microscopes as those of the large instrument referred to, which are four or five times more powerful than the microscopes of the omnimeter according to my experiments above mentioned. It would appear, therefore, that the power of the microscope should be increased rather than the power of the indicating appliances. But, before proposing to do that, we must ascertain what amount of increase in microscopic power would be really effective, and to do this we must take one step further and examine the telescope, for again applying Troughton's rule, it is of no use to make the microscope, with which the observation is only read off, much more powerful than the telescope with which the observation is taken.

13. I find, from very numerous experiments made for other purposes, that telescopes of about the size in question, if good, when directed to an opaque object at comparatively short distances and well illuminated, show no smaller angular quantity than about (7″) seven seconds of arc. I say "about," because the quantity varies with the light and the quality of the telescope. I find, too, that an average spider's line in such telescopes subtends about the same angular quantity.

14. It is easy to compute that seven seconds of arc on the straight scale, taken as part of a circle of say 6 inches radius, are equivalent to $\frac{1}{5000}$ of an inch. Now this is exactly the quantity which, by direct experiment above referred to, I find to be the least that the microscope will show, and five times greater than the smallest quantity which the scale and micrometer head already indicate.

15. If the above reasoning is sound, it would therefore appear that the part of the instrument which requires strengthening is the telescope itself, not the indicating appliances, which are already so much in excess. What angular quantity, then, should the telescope be able to show in order to place it on a par with the indicating parts? These now show, as I have stated, the $\frac{1}{25000}$ of an inch. This, on a circle of 6 inches radius, is equivalent to (1·4″), less than one and a half second of arc. No telescope of less than 2½ or 3 feet focal length would show such a quantity in an opaque object. To apply such a telescope to an omnimeter would so entirely alter the character of the instrument that I need not discuss the project.

16. The conclusions at which I arrive are as follow :—

1st.—That the telescope cannot be much increased in size without altering the whole design of the instrument, and that, as with it the observation is taken, it must be accepted as the basis.

2nd.—That the microscope is at present on a par with the telescope, but that, in order that no part of the accuracy of the original observation should be lost, the microscopic power should be increased, which can be done to a certain limited extent without inconvenience to the illumination of the straight scale.

3rd.—I consider, and here I come to a conclusion exactly the reverse of that arrived at by Major Laughton, that the indications of the micrometer are already, in a considerable degree, more delicate than they need be. I should be disposed to substitute a smaller circular head rather than a larger one, in order to diminish the weight on the screw, which is of very delicate structure, and to lessen the risks of accident to this very exposed part.

4th.—It should not be lost sight of that, after all, the accuracy of the result is dependent on the accuracy of the division of the straight scale. It is not probable that their errors are so small as $\frac{1}{25000}$ of an inch, the present value of one division of the micrometer.

17. I may close this part of the subject with the general remark that the power of an instrument is, like that of a machine, equal to the power of its weakest part, and that in designing instruments harmony of proportion should be more studied than it is. The problem, in designing a portable instrument, I conceive to be this, " Given a certain size or mass, how can the utmost power be got into that?" It is evident that this can only be done by giving, as nearly as possible, equal power to all the different members of the instrument. It is difficult to arrive at these proportions rigorously, but I have endeavoured to show how, in a given instrument, some idea of the approach made to them can be gained.

18. I would now say a few words on the distances which Major Laughton proposes to measure with the omnimeter, and of the admissible errors which he contemplates.

19. In his paragraph 31, which I have already quoted, he speaks of measuring, as I understand him, by a single observation, " 1,200 yards."

20. Referring to the printed description of the instrument furnished to me by the inventor himself, M. Eckhold, I find the following passage on this point :—

" *General Observations.*—The practice of the omnimeter has proved to us that, in the measurement of lengths requiring extreme accuracy, it is not prudent to make the points more than 200 metres [656 feet] apart. At that distance we are within an approximation of 0·04 metres [1·57 inches] ; at 500 metres [1,640 feet, or 546 yards], by making use of a staff of 4 metres high, the approximation will be within 0·17 metres [6·7 inches], a sufficiently satisfactory

result, as, by one forward and one back sight, we can determine a kilometre within 0·34 metres [about $\frac{1}{3000}$th]. With the chain we know, as a fact, that it is hardly possible to come nearer than within a mean of $\frac{1}{700}$ of difference."

21. It will be seen from this that the inventor only contemplates measuring distances of 656 feet, or 219 yards, with the 2-metre staff, and not more than 546 yards even with a 4-metre staff, and that he does not speak of such distances as 1,200 yards, to which Major Laughton alludes. I have recently discussed the subject verbally with the inventor, who adheres to the above as what the instrument may be expected to do, repudiating any profession of measuring distances so great as 1,200 yards. Indeed, at that distance the staff would hardly be discernible at all. It is no less than 54½ chains, whilst 10 or 12 chains is an extreme distance for reading staves in ordinary levelling work with a very similar telescope.

22. As to the average errors of chain measurements, Major Laughton's estimate (paragraph 34) is 1 foot in 1,000 or $\frac{1}{1000}$th, whereas M. Eckhold, in the above extract, takes it at $\frac{1}{700}$th. My own experience in chaining has been very limited, and I can therefore express no opinion on this point. Much, of course, depends on the character of the ground chained, and on the precautions taken in testing and stretching the chain, etc., and it is, of course, hardly to be expected that all observers will ensure the fulfilment of the same conditions, and a very small variation in method will lead to a very different result.

23. It is to be remarked, however, that the more uneven the ground the more probable will be the superiority of the omnimeter over the chain as a distance measurer.

24. But, on the whole, I am inclined to caution observers against expecting too much from the instrument for this particular purpose. No method of determining distances is so accurate of linear measurement. It would be invariably employed if the intervention of hills, rivers, undulations, and other accidents of ground, did not stand in the way of its economical use. The theodolite and triangulation secure much greater rapidity and cheapness, but not greater accuracy, than linear measurements. The omnimeter method is virtually a species of triangulation of an unfavourable kind, as I have already stated, owing to the shortness of the base. I do not say this in order to discourage the use of the instrument. Far from it. I think it should be thoroughly tested, as a most promising contrivance, but a word of caution against pushing its principle beyond what it is calculated for may not be amiss.

25. I will now refer to the only test given by Major Laughton of the instrument as a distance measurer, namely, the discordant results given by different observers in reading off the scale and micrometer. Such discordances are to be expected. They constantly occur in the reading off of astronomical instruments of the highest class, which is effected by means identical with those in question; they are due to physiological causes inherent in each individual, and, in regular observatories, are allowed for under the name of "personal equation."

26. I would beg to suggest to Major Laughton these further tests:—

1. Let each observer make a considerable number of settings of the micrometer, with the instrument securely clamped, a second observer reading off and recording the micrometer readings, of which the first observer should be ignorant until the series is completed, in order that he may have no bias. If several observers go through this process, we shall have data for ascertaining whether the discrepancies are due to different degrees of skill in different observers, shown by some obtaining a more accordant series than others; or whether there is a deficiency in the definition of the microscope, or in the clearness of the scale, or some other mechanical defect, which will be shown by all the different series exhibiting about equal discordances. If it is found that the differences of each observer with himself are about equal in all cases, but that the mean results (the instrument being of course unmoved) obtained by different observers are not alike, which I imagine is what Major Laughton has found, this will indicate the "personal equation" above alluded to as a phenomenon which may be expected to occur.

2. Let now several distances be measured on level ground with great care, with the best means available. Let the different observers make each a number of determinations of each distance, the readings of the micrometer head being always taken by a second observer as before. This is the real practical test of the instrument as a whole. We shall learn from it several things, namely, whether all the observers are equally skilful, as shown by the accordance of the series taken by each; whether different observers, assumed of equal skill, obtain similar distances; and whether the omnimeter distances agree, within admissible limits, with the measured distances, and if not, whether the discordances follow some law, or are apparently accidental.

27. The observers selected to make these tests should be of the class who are to be employed in using the omnimeter in the field, not men selected for skill in the use of delicate instruments.

28. I should expect to find from these tests two things. First, that very different degrees of skill exist amongst the observers. This evil can, of course, be corrected only by training and practice. Second, that different observers, equal in skill, disagree in their determination of the same distance. If this is found to be the case, it will be probably a matter of personal equation, which will render it necessary that every observer, before working with a given omnimeter, should compare its determinations taken by himself with carefully measured test distances, and apply to all distances obtained by him with that individual instrument a correction previously so ascertained.

29. I trust that the tenor of these remarks may not be considered as opposed to the introduction of the omnimeter. I entertain, on the contrary, a high opinion of its merits. It promises to reduce very considerably the cost of levelling and chaining. But nothing is more calculated to bring a new invention into disrepute than to claim too much for it. The questions I have here discussed relate to its accuracy, which there is some danger may be over-rated. I have, therefore, endeavoured to show on what its accuracy depends, and what is the probable limit of accuracy attainable; my opinion, stated in general terms, being that it will most likely be found in practice rather to fall short of than exceed the ordinary methods in precision, though to an extent insufficient to forbid its substitution for them in the great majority of cases, but that some special training of those using the instrument will be found necessary in order fully to call forth its powers.

LAMBETH OBSERVATORY,
29th January 1872.

(Signed) A. STRANGE, Lieutenant-Colonel,
Inspector of Scientific Instruments.

No. 45. ORDER THEREON, 4th September 1872, No. 2,102.

ESTABLISHMENT, No. 3.

ORDERED that the two last-named publications be re-printed for circulation to the officers of the Public Works and Survey Departments, Major Laughton's report having already been distributed.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 46. Read the following letter from the General Superintendent of Public Works Stores and Workshops, to the Secretary to Government, Public Works Department, dated Chepauk, 17th August 1872, No. 477:—

WITH reference to G. O., dated 14th instant, No. 1,942, I have the honour to submit an abstract estimate of stores likely to be indented for from England during 1873-74.

2. Instructions contained in paragraph 3 of the Government of India's letter No. 645 A. G. have been attended to.

Estimate of Stores required from England for 1873-74.

Items.	Tons.	Rate.	Value.
ORDINARY GRANT, IMPERIAL.			
General Services.			RS.
Machinery ...	...	...	...
Scientific Instruments ...	...	...	10,000
Iron Mongery ...	...	...	4,000
Miscellaneous ...	...	...	1,000
PROVINCIAL AND LOCAL FUND.			
Dowlaishweram Workshops.			
Iron ...	...	...	14,000
Chepauk Workshops.			
Iron ...	...	...	10,000
Iron Mongery ...	...	...	10,000
Miscellaneous ...	...	...	8,000
	...	...	57,000
Irrigation Department.			
Machinery ...	...	...	41,500
Iron Piping ...	...	...	42,000
Iron ...	...	...	10,000
Iron Mongery ...	...	...	28,300
Miscellaneous ...	...	...	3,200
Total...	...	...	1,25,000

No. 47. ORDER THEREON, 5th September 1872, No. 2,103.

ACCOUNT, No. 3.

ORDERED that the estimates received with this letter and from the Chief Engineer for Irrigation be forwarded to the Home Government.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 48. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 5th September 1872, No. 2,104.

ACCOUNT, No. 4.

SIR,—I am directed by His Excellency the Governor in Council herewith to forward a copy of a Despatch No. 17, dated 4th September 1872, to the Home Government giving cover to an estimate of the stores required by the Public Works Department of this Presidency for the official year 1873-74.

2. The demand in the Irrigation Department is made in anticipation of sanction for the Perryaur Project now nearly ready for submission, and which promises to be really remunerative.

No. 49. Read the following letter from the Assistant Secretary to the Government of India, Public Works Department (Buildings and Roads—Miscellaneous), to the Secretary to the Government of Madras in the Public Works Department, dated Simla, 9th August 1872, No. 358 B. C. :—

I AM directed to acknowledge the receipt of your letter No. 1,342 of the 29th May last, requesting the allotment of funds for the construction of a breakwater at Madras, and in reply to state that the Governor-General in Council is unable to promise any money for the project until a report is furnished as to the manner in which it is proposed to provide for interest and repayment of the principal.

2. Moreover, I am to add that, save with special permission from the Secretary of State, it is not, under existing orders, open to the Government of India to authorize the construction of a work of this nature with borrowed money.

No. 50. ORDER THEREON, 5th September 1872, No. 2,105.

CIVIL WORKS, No. 2.

RECORDED with reference to letter to Government of India, dated 27th August 1872, No. 2,036.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 51. Read the following Endorsement of the Chief Secretary, dated Ootacamund, 20th August 1872 :—

From the Master Attendant, Administrative Department, to the Chief Secretary to Government, Marine Department, dated Madras, 13th August 1872, No. 4,538.

WITH reference to the Proceedings of Government, dated 7th August 1872,* I have the honour to inform you that I have already forwarded to the Secretary to Government, Public Works Department, a chart† of the Paumben Pass with rough pencil delineations of the course of the ship canal, or channel, I propose to be cut through part of the island of Ramisseram, and also of a breakwater between the shingle islets‡ for the protection of the southern entrance of the canal from the swell brought up by the south-west monsoon.

* No. 70.

† Another herewith sent.

‡ Width of channel to be closed, only 500 yards and greatest depth of water 13 feet.

2. Sir James Elphinstone's scheme has many merits, yet I think mine has fewer difficulties to overcome; for instance, no piers will be required at the northern entrance of the passage, and only one short one I should think at the southern entrance.

3. The only difficulty, if it can be called one, is the deepening to 24 feet of the portion of the Paumben Pass between the junction of the canal to the northern entrance, which is described by Mr. Robertson, the Harbour Engineer, as "cut through a sandstone reef partly dry at low water."

4. In these days of advanced engineering science, I fancy this sandstone reef can easily be cut through to the depth required.

5. One powerful argument in favour of my scheme is the following:—We know that, from the peculiar position and nature of the northern entrance to the Paumben Pass, it is almost entirely free from silt, whereas we can have no possible assurance that the two other channels proposed would not silt up.

TRANSFERRED, with duplicate plan, to the Department of Public Works.

(Signed) R. S. ELLIS,
Chief Secretary.

No. 52. ORDER THEREON, 5th September 1872, No. 2,106.

CIVIL WORKS, No. 3.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 53. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, (Railway,) dated Simla, 20th August 1872, No. 1,344 G-R:—

IN acknowledging the receipt of your letter, No. 53, dated the 6th August 1872, stating that orders by the Government of India are still awaited on the proposal submitted with your letter, No. 2,678, of the 26th October 1871, on the arrangements for water-supply at the Raichore Junction Station, I am directed to forward a copy of the accompanying letter from the Government of Bombay, No. 889, dated the 6th August 1872, and to request that the proposals of the Madras Railway Company may be revised in accordance with the terms of paragraph 5 of the Minutes of Meeting held at Raichore on the 23rd February last, if the Company have consented to the arrangement.

From the Secretary to the Government of Bombay, to the Secretary to the Government of India dated Bombay Castle, 6th August 1872, No. 889.

I AM directed to forward, for the information of the Government of India, with reference to your letter, No. 2,409 R., dated 30th November last, extract paragraph 5 of Minutes of a Meeting

held at Raichore on the 23rd of February last, to discuss various questions connected with the working of the Junction Station, at which the watering arrangements required for the Madras and Great Indian Peninsula Railway Companies were discussed and settled.

2. The proceedings were not received by the Consulting Engineer for three months after the meeting, and the reference from the Government of India on the subject of the water tank was overlooked.

No. 54. ORDER THEREON, 5th September 1872, No. 2,107.

RAILWAY, No. 12.

COMMUNICATED to the Consulting Engineer for Railways, with reference to the under-mentioned Orders :—

21st Oct. 1871, No. 2,677.
11th June 1872, ,, 1,441.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 55. Read the following letter from the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 21st August 1872, No. 1,103 :—

2 Completion Certificates.

THE accompanying completion certificates have been forwarded to this office by the Superintending Engineer of the 8th Division, and as they have been drawn up under circumstances of an exceptional nature and do not meet the requirements of the order* of Government which prescribes the form of certificate to be adopted, I have considered it necessary to submit the documents to Government for orders as to whether they may be accepted.

* G. O. No. 104, dated 16th March 1871.

2. The works referred to were executed during the period Mr. Martin (since dismissed the service) was in charge of the Shevagunga Range. Considering the circumstances of Mr. Martin's dismissal with which the Superintending Engineer is better acquainted than this office, there will be little use in referring these certificates to that officer, as if he had any remarks to make he would have done so on the certificates or in his letter which gave cover to them.

No. 56. ORDER THEREON, 5th September 1872, No. 2,108.

ACCOUNT, No. 5.

THE Controller of Public Works Accounts is authorized to accept the completion certificates submitted with this letter.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 57. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 1st August 1872, No. 1,888:—

In reply to G. O., No. 32, dated 3rd July 1872, I have the honour to report that Captain Hunter did indent "on loan" for blocks, etc., from the Arsenal, and as he received no notice under G. O., No. 2,957, dated 23rd November 1871, was under the impression that he might return all, paying for any wear and tear of ropes, etc.

2. The articles will be of service in our stock, and may be debited to "Tools and Plant," if the Government will permit, instead of to the gas works.

3. As to the Mint Buildings, it appears that it was supposed that the full allotment could not be expended, and Rupees 400 were surrendered; but a larger amount of work was done than was anticipated, and application to cancel the surrender could not be sent in time.

Provincial Works, Civil Buildings.

1. Work was in progress on the Revenue Survey Office under a sanctioned estimate for Rupees 1,78,400, and the flooring was admitted as being within 5 per cent. of the total sum, and is now nearly completed.

2. The Cooum river was cleaned in consequence of an urgent requisition from the President Municipal Commission, and work was completed before an estimate could be prepared. The completion certificates have been all sent in.

No. 58. Order thereon, 5th September 1872, No. 2,109.

ACCOUNT, No. 6.

Communicated to the Controller of Public Works Accounts.

2. The proposal in paragraph 2 is approved, and in order to meet the cost of the articles a sum of Rupees 1,687 will be transferred from the Presidency Stores allotment under "Tools and Plant."

3. It is observed that the G. O, No. 2,957, dated 23rd November 1871, was communicated to all Superintending Engineers, and ought therefore to have been in the possession of Captain Hunter.

4. Under the circumstances explained, the excess over appropriation in the other items will be passed.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 59. Read the following Circular from the Government of India, Public Works Department, (Account—General,) to the Governments of Madras, Bombay, Bengal, the North-Western Provinces, and the Punjab; the Chief Commissioners of the Central Provinces, Oudh, British Burmah, and Mysore; the Resident at Hyderabad; the Agents to the Governor-General for Central India and Rajpootana; and to the Superintendent of Port Blair and Nicobars; and the Chief Commissioner of the Andaman and Nicobar Islands, dated Simla, 16th August 1872, No. 41:—

Copy of the following note by the Officiating Accountant-General, Public Works Department, forwarded to Local Governments and Administrations with a

request that the Stock Ledger hitherto kept up in the Executive Engineer's Office may be dispensed with from the commencement of the current official year.

2. A Standing Order correcting the Departmental Code and Forms will be issued in due course.

(By Order.)

(Signed) C. A. DICKENS, Colonel, R.A.,
Secy. to the Govt of India.

NOTE by Lieutenant-Colonel P. P. L. O'CONNELL, R. E., Officiating Accountant-General, Public Works Department, on the proposal for dispensing with the Stock Ledger kept up in Executive Engineer's Office, No. 1,422 G, dated Simla, the 9th August 1872.

IT having been suggested that the Stock Ledger kept up in the Executive Engineer's Office might conveniently be dispensed with, as the information contained in it is recorded month by month in Part III. of the Stock Abstract, and also on the reverse of the standard form of stock account current, I adopted the usual course of ascertaining from the several Controllers of Public Works Accounts their opinions as to the expediency or otherwise of abolishing the form of record in question. The replies of these officers have been duly received, and I find that the general opinion is unanimously in favour of dispensing with the Stock Ledger, which is characterized as being superfluous and of no real value whatever.

2. With the sanction of the Government of India the form (No. 31) might, therefore, be usefully abolished from the commencement of the current official year.

No. 60. ORDER THEREON, 5th September 1872, No. 2,110.

ACCOUNT, No. 7.

COMMUNICATED to the Controller of Public Works Accounts for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 61. Read the following letter from the Officiating Superintending Engineer, 2nd Division, to the Secretary to Government, Public Works Department, dated Camp at Venkatachellum's Choultry, 22nd August 1872, No. 75:—

I HAVE the honour to request the permission of Government to write off to "Profit and Loss" Rupees 183-13-3, being the difference between the book value

and the actual amount realized by the sale of the under-mentioned unserviceable materials. These articles were purchased many years ago,* and were sold recently because they could not be used for Government purposes:—

* For works in the Western Delta, Kistna District.

Articles.	No. or quantity.		Book value.			Sale proceeds.			Difference to be written off to Profit and Loss.		
	Candies.	Paras.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Lime at Chebrole	37·	5	314	1	3	139	0	0	175	1	3
Blackwood posts	No. 10		20	0	0	11	4	0	8	12	0
Total...			334	1	3	150	4	0	183	13	3

No. 62. ORDER THEREON, 5th September 1872, No. 2,111.

ACCOUNT, No. 8.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 63. Read the following letter from the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Kokracolum, 16th August 1872, No. 2,326:—

I HAVE the honour to submit, for the sanction of Government, a fresh plan and estimate, amounting to Rupees 1,500, for constructing a Post Office at Sattoor, in lieu of those mentioned in G. O., No. 77, dated 16th June 1870.

1 Plan.
1 Estimate of Rupees 1,500.
1 Specification.

2. As the original plan of the building was found to be very defective indeed in ventilation and in other respects, it has been carefully revised by me; and it is approved by the Postmaster-General.

3. The sum of Rupees 1,500 required for this service has been already allotted in G. O., No. 1,522, dated 22nd June 1872, and I, therefore, request early sanction be accorded to the estimate, in order to enable me to complete the work within the current official year.

No. 64. ORDER THEREON, 5th September 1872, No. 2,112.

CIVIL WORKS, No. 4.

HIS Excellency the Governor in Council sanctions the revised plan with estimate, amounting to Rupees 1,500, for the construction of the Sattoor Post Office.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 65. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 13th August 1872, No. 2,068:—

In reply to G. O. No. 830 of 25th March 1872, I have the honour to forward a comparative statement for the expenditure on the gas works in the Fort. From this it will be seen that against the various estimates amounting to Rupees 84,005 in all we have received materials to the value of Rupees 56,043. Of these we have worked up Rupees 11,219 worth at an expenditure of Rupees 11,205 and it is estimated that it will cost Rupees 10,976 more to utilize the stock on hand valued at Rs. 44,824. The total value of the work will then be Rs. 78,224; there will then be a saving on the above-mentioned estimates of Rupees 5,781. I have therefore to request that an allotment of Rupees 10,976 may be made to enable me to complete the work.

No. 66. Order thereon, 5th September 1872, No. 2,113.

MILITARY WORKS, No. 3.

With this letter the Superintending Engineer of the 4th Division submits the comparative statement called for in G. O. No. 830, dated 25th March 1872, contrasting the amount of work executed and that remaining to be done with the revised estimates for the construction of the Fort St. George Gas works and the necessary distribution works. The original estimates amount in the aggregate to Rupees 84,005; but a saving on this sum of Rupees 5,781 has been effected, reducing the probable cost of the works to Rupees 78,224, work to the extent of Rupees 22,424 has been already carried out, leaving work valued at Rupees 55,800 still to be executed; but if from the last-named amount the cost of the pipes, etc., obtained from England under the arrangements sanctioned in the Proceedings communicated with G. O. No. 2,296, dated 20th July 1868, be deducted, a sum of Rupees 10,976 only will be required to complete the project, and this amount which includes Rupees 1,200 for an office and store-room for the Superintendent of the works, Colonel Moberly requests may be allotted for expenditure during the current official year.

2. The Government sanction the proposed expenditure; funds will be allotted, if available, later in the year.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 67. Read the following Proceedings of the Board of Revenue:—

Public Works of Trichinopoly District.—Collector's report on progress of — during 1871-72, submitted to Government with remarks. (Here enter No. 1,489 of 3rd August 1872.)

No. 68. Order thereon, 5th September 1872, No. 2,114.

CIVIL WORKS, No. 5.

Communicated to the Superintending Engineer of the 6th Division.

2. It is observed that the Board of Revenue are in error in supposing that unexpended grants for Civil Buildings lapse as they did before the introduction of the system of provincial grants. It is, however, very desirable that grants for Civil Buildings should be utilized, as far as possible, within the years for which they are allotted.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 69. Read the following Proceedings of the Board of Revenue :—

Public Works—executed from Imperial and Provincial Funds in South Arcot District.—Report of Collector on progress of — during 1871-72, submitted to Government with remarks. (Here enter No. 1,563 of 12th August 1872.)

No. 70. ORDER THEREON, 5th September 1872, No. 2,115.

CIVIL WORKS, No. 6.

COMMUNICATED to the Superintending Engineer of the 5th Division, who is expected to see that a better state of things shall prevail with reference to the Palandorai Anicut than is alluded to in these proceedings and report, a more efficient Range Officer being now in charge.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 71. Read the following Proceedings of the Government of India, Public Works Department, (Account—Railway,) dated Simla, 22nd August 1872, Nos. 1,096—99 A. R. :—

Limit to the amount of Guaranteed Capital locked up in stores.

READ again—

Public Works Department Resolution No. 238—42—A. R., dated 25th March 1871.

Read also—

Despatch from Secretary of State, Financial No. 262 of the 27th June 1872.

RESOLUTION.—The Secretary of State having again called the attention of the Government of India to this important subject, His Excellency in Council desires that the information called for shall be submitted so as to reach the Government of India by the 15th September next without fail for the undernoted Railways :—

East Indian Railway, Main line.
" " " Jubbulpoor line.
Great Indian Peninsula Railway.
Madras Railway.
Sindh, Punjab, and Delhi Railway.
Eastern Bengal Railway.

These undertakings are now practically completed, and there should be no difficulty experienced in at once complying with the requirement of Her Majesty's Government. Should, however, the Agencies of any of the Companies named still be unable from any cause to meet the wishes of Her Majesty's Government, the reasons should be distinctly reported, and the several Consulting Engineers concerned should send forward their recommendations on the subject, accompanied by such detailed information as may be forthcoming, so as to reach the Government of India by the date named.

ORDER.—Ordered that the foregoing Resolution be forwarded to the Local Governments and officers noted in the margin for information and guidance.

The Government of Madras.
" " of Bombay.
" Consulting Engineer, Calcutta.
" " " Lahore.

(Signed) P. O'CONNELL, Lieut.-Colonel, R. E.,
Offg. Deputy Secy. to the Govt. of India.

No. 72. ORDER THEREON, 6th September 1872, No. 2,116.

RAILWAY, No. 13.

COMMUNICATED to the Consulting Engineer for Railways for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 73. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department (Railway), to the Secretary to the Government of Madras in the Public Works Department (Railway), dated Simla, 21st August 1872, No. 1,355-G. R. :—

I AM directed to acknowledge the receipt of your docket No. 1,809, dated the 30th July 1872, reporting experimental reductions from the first idem in the first and third-class passenger fares on the Great Southern of India Railway, and to state in reply that the Government of India are glad to see that this attempt has been made to increase the passenger traffic, and will look with interest for a report of the result.

2. The experimental third-class fare of 2 Pies a mile is undoubtedly low, and its financial success must depend on the increase in the number of passengers. The precise arrangements by which this increase is most likely to be attained must depend on the local knowledge and experience of the Railway Authorities and of the advisers of the Government of Madras; but I am directed to suggest, for consideration, the possibility of increasing the passenger traffic by making railway travelling more convenient than it usually is to villagers by means of running slow, local, pick-up trains, with frequent stoppages.

3. This subject is a large one. The slow expansion of the passenger traffic on many Indian Railways is a matter that has attracted attention, and cannot be

effectually dealt with until traced to its source. Such experimental reductions as those now sanctioned by the Government of Madras will afford much help in the solution of the question, and I a n therefere desired to suggest the considera-tion of such additional experiments as that briefly sketched in the preceding para-graph, the detail of which, if it should be thought practicable and advisable, can best be filled in by the authorities on the spot.

No. 74. ORDER THEREON, 6th September 1872, No. 2,117.

RAILWAY, No. 14.

COMMUNICATED to the Consulting Engineer for Railways, with reference to G. O. No. 1,809, dated 30th July 1872, and for such remarks as he may have to offer on the suggestion in para-graph 2.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 75. Read the following Proceedings of the Government of India, Public Works Department, (Railway,) dated Simla, 12th August 1872, Nos. 1,286—91-G.R.:—

Proposal for a conference of the Auditors and local Examiners of Accounts of Guaranteed Railways to consider general rules and standard forms for dealing with traffic accounts and their audit, also to consider the question of the desirability of estab-lishing a clearing-house for Indian Railways.

READ again—

Public Works Department Resolution Nos. 561-65 R., dated the 29th March 1871.

Read also the following papers:—

Letter from the Oudh Administration, No. 2,154, dated 13th October 1871, and enclosure.

Docket from Joint Secretary to Government of Bengal in the Public Works Department, Railway Branch, No. 1,269 G., dated 19th June 1871, and enclosure.

Public Works Department No. 1,216 R., dated 12th July 1871, to ditto.

Letter from ditto No. 1,577 G., dated 1st August 1871, and enclosure.

Letter from Secretary to Government, Bombay, in the Public Works Department, (Railway,) No. 1,281, dated 19th October 1871, and enclosures.

Letter from Secretary to Government, Bombay, in the Public Works Department, (Railway,) No. 1,468, dated 6th December 1871, and enclosure.

Letter from Secretary to Government, Madras, in the Public Works Department, (Railway,) No. 1,400, dated 6th June 1872, and enclosure.

RESOLUTION.—The papers now read are the replies of the Local Governments and of the Oudh Administration to Public Works Department Resolution Nos. 561-65 R. of the 29th March 1871, calling for an expression of their opinions and those of the Agents of the several Guaranteed Railway Companies on the proceed-ings of a conference which was held in Calcutta in January 1871, to consider the question of the form of vehicles most suitable for railway traffic in India, and the best mode of working the traffic; also, on the proposal to hold an annual confer-ence composed of Government and Railway officers, to discuss railway questions of general interest. The Punjab Government has not replied. In the present resolution on the subject, matters connected with accounts are dealt with.

2. Opinions are divided as to the present necessity for a clearing-house on the English system, the majority of authorities considering that one is not yet needed. There is a general agreement in favour of annual meetings of the Government and Railway officials.

3. Although it may not yet be necessary to establish a clearing-house, the Government of India are of opinion that the time has arrived for laying down, if possible, some general rules and standard forms for dealing with the traffic accounts and audit of the several railways in India, in view to a uniformity of system being attained, and there appears to be no better step towards bringing about such a result than that of holding a conference of the Auditors and local Examiners of the several railways. But before these officers meet to discuss the several systems in force on their respective railways, it appears desirable that each Auditor should draw up a full account of his own system, and prepare a complete set of the forms of accounts, which should be circulated for discussion and thorough comprehension by the other Auditors and Government Examiners of Accounts. Copies of the descriptions of procedure and forms in force on each railway should also be sent forward to the Government of India and the Accountant-General, Public Works Department, with as little delay as possible.

4. Time, place, and the officers of the Railway and Account Branches representing Government, will be hereafter named, but it may now be stated that the conference should be assembled with the full understanding that the decision of the majority, as regards the procedure and forms to be followed, shall be recommended for adoption on all Indian Railways, both Guaranteed and State. A conference thus assembled may, the Governor-General-in-Council is of opinion, be held with advantage, and a fair hope of a good practical result being attained.

5. The question of the necessity or desirability of establishing a clearing-house for Indian Railways is one that can be most fitly dealt with by the proposed conference, and this matter should be gone into thoroughly and exhaustedly with a view to a recommendation on the subject being sent forward.

ORDER.—Ordered that this Resolution and copies of the papers now read be communicated to the Governments and officers named in the margin for information and early action in connection with the officers of the several Guaranteed Railway Companies with a view to the assembly of the proposed conference in the ensuing cold weather.

Madras } in the Public Works Department
Bombay } (Railway).
Consulting Engineer, Calcutta.
Do., Lahore.
Do., Lucknow.
Accountant-General, Public Works Department.

(Signed) H. DRUMMOND, Colonel, R. E.,
Officiating Deputy Secretary.

No. 76. ORDER THEREON, 6th September 1872, No. 2,118.

RAILWAY, No. 15.

COMMUNICATED to the Consulting Engineer and the Examiner of Railway Accounts for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 77. Read the following letter from the Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 17th June 1872, No. 697 :—

I HAVE the honour to acknowledge the receipt of Proceedings No. 574 of the 2nd March 1872, in which the Government request me to depute a competent member of my establishment to proceed to Bellary, with a view to a thorough examination of the timber accounts of the Bellary Range.

2 Letters from Mr. Fraser with 2 Enclosures.
11 Statements, etc.
1 Memorandum from the office of the Controller of Public Works Accounts, No. 4,605, dated 13th March 1868.

2. In reply I have the honour to state that, on the 20th March last, I proceeded in person to Bellary, accompanied by T. Venkatapati Naidoo, one of the ablest Accountants in my office, and a person in whose integrity of character and thorough devotion to duty I have the fullest confidence. On my arrival at Bellary I gave all necessary directions to the Accountant to guide him in the work which he had been called upon to perform, and once during his stay there I examined such portions as he had been able to accomplish.

3. It is necessary for me here to repeat what has been already stated in paragraph 4 of Mr. Executive Engineer Fraser's letter, recorded in G. O. of the 2nd March 1872. Up to February 1868, all timber purchased for works in the Bellary Range was treated as "stock," receipts being credited, and issues debited, in that account. On the 13th March 1868, or nearly three months before I joined this office, the enclosed memorandum No. 4,605, was written, and it appears that that memorandum led to the closing of the Stock Accounts in Bellary. This closing was effected by crediting the Stock Account with the total value of the timber appearing therein, and correspondingly, but arbitrarily, debiting works. A reference to the memorandum quoted will show that my predecessor never contemplated an *arbitrary* disposal of the balances under "stock," but believing, it is presumed, that most of the articles appearing in the Stock Account had been purchased for specific works, requested Range Officers to use their best endeavours to clear that account in March 1868, and further desired that, in all cases in which this was not practicable, a report should be submitted with the accounts for March, explanatory of the causes which prevented the adjustment which had been suggested. I am free to confess that the memorandum under reference was far too wide in its scope than was perhaps necessary or called for, and Range Officers were probably led to conclude that the closing of the Stock Account, by whatever means effected, was of paramount importance; but I am nevertheless of opinion that as Range Officers were distinctly allowed the option of deferring the closing of the Stock Account, on proper and sufficient grounds to be distinctly reported, it was clearly the duty of the Executive Engineer in charge of the Bellary Range to have brought to notice the impracticability of closing his timber account, with any regard to State interests, and to the sufficiency and effectiveness of his own control. No such representation, however, appears to have been made, and the result of the transfer to *works* of the timber which appeared in the *Stock* Accounts up to February 1868, and the direct debit to the former head of the timber subsequently purchased, has been a laxity of control on the part of the

Range Officer, and what appears to be a systematic overcharge to works leading to a loss to Government of nearly Rupees 28,000.

4. When Colonel Palmer assumed* charge of the Bellary Range, the Stock Accounts showed timber to the value of Rupees 18,076-3-9. Subsequent purchases raised this amount, in March 1868, to Rupees 23,861-4-9, to which it is necessary to add Rupees 405-5-7 for reasons to be presently explained, thus increasing the value of timber on the Stock Account, on the 31st March 1868, to Rupees 24,266-10-4.

* November 1867.

5. As regards the sum of Rupees 405-5-7 just mentioned, I have to state that from the vouchers produced in support of the quantities of timber transferred to Colonel Palmer by Mr. Assistant Engineer Porter in November 1867, it appears that one item comprised a little over 2,454 cubic feet of blackwood. Of this quantity, only 2,348 cubic feet were actually brought on to the Stock Accounts by Colonel Palmer, and as no reason is given for the omission of the difference (which appears to have been made up of small savings extended over a long period), I have considered it my duty to make the addition in the statements now laid before Government.

6. After March 1868, other purchases of timber were made, as per General Abstract A, at a cost of Rupees 78,396-9-3, which, with the sum of Rupees 24,266-10-4 mentioned in the concluding clause of paragraph 4, gives a total of Rupees 1,02,663-3-7. If to this latter sum be added the claim on account of cart hire, namely, Rupees 1,611-5-7, made by Kamal Saib, and referred to in Mr. Fraser's letter recorded in the Order of the 2nd March 1872, the amount to be accounted for is Rupees 1,04,274-9-2.

7. On reference to the debtor side of the account marked A, the Government will observe that this sum is accounted for as follows :—

	RS.	A.	P.
By value of timber debited to works according to the wood yard lists	60,901	5	0
By sales of timber	14,278	8	3
By value of do. transferred to other ranges	1,291	4	0
By amount written off under the authority of Government Orders, Nos. 254 and 2,077, dated 24th January and 1st July 1868, respectively	6,538	2	0
By value of timber on hand	2,667	1	7
By loss or deficiency not satisfactorily accounted for ...	16,986	14	9
By amount of claim urged by Kamal Saib not yet disposed of.	1,611	5	7
Total...	1,04,274	9	2

8. According to the above the deficiency is Rupees 16,986-14-9 *plus* Rupees 1,611-5-7 if Kamal Saib's claim be admitted, in all Rupees 18,598-4-4; but this does not represent the entire loss which is found on a thorough examination of the timber accounts. The sixth item entered at the foot of paragraph 7 above appears, in the Range Progress Reports, as charges to various works on account of timber supplied, but not so used, and *of which no mention is made in the timber-yard accounts.* The entries in the Progress Reports are, therefore, fictitious, but apart from that item there are others which, although appearing in the Range Accounts *and in the*

timber-yard lists as timber issued to works or sold to contractors, have really no connection with such transactions. The following is a list of these items :—

	RS.	A.	P.
1. Timber improperly charged to works on which there were small savings as per Statement F	5,646	4	9
2. Do. do. to the Alipore tank, now disallowed in communication with the Range Officer	544	0	2
3. Value of logs alleged to have been sold to Contractors Nagappa and Ramasawmy, but now disallowed, on the ground that the log book shows these specific logs to have been appropriated to various works, the debits to which are allowed in Statement A, and no entry of the sale appears in the yard issue book	2,585	0	0
Total...	8,775	4	11

9. In addition to this there is a sum of Rupees 616-7-1 representing the value of old building materials the sale proceeds of which should have been credited to "Revenue Miscellaneous" but were improperly credited to *works* to cover a portion of the deficiency in timber. Taking this last amount (Rupees 616-7-1) in conjunction with the total of the three items detailed in the preceding paragraph, and adding thereto the deficiency of Rupees 18,598-4-4 (*vide* two last items at the foot of paragraph 7), the entire loss by the timber transactions of the Bellary Range from November 1867 to March 1872 is Rupees 27,990-0-4.

(1.) Rupees 16,986-14-9

10. To show the various works to which the item of loss as per margin stands charged in the Executive Engineer's accounts, I beg to enclose four detailed statements, marked B, C, D, and E, as follows :—

	RS.	A.	P.
(1.)—Of overcharges from timber which appeared in the Stock Accounts	3,246	6	7
(2.)—Do. from timber supplied by Messrs. Abraham and Co.	33	12	0
(3.)—Do. by Messrs. Binny and Co.	12,818	10	1
(4.)—Do. by Public Works Workshop and Petty Suppliers ...	888	2	1
Total...	16,986	14	9

11. I also beg to forward statements marked F, G, and H, showing—

(1.) The particulars of the overcharge to various works of the sum of Rupees 5,646-4 9 referred to in paragraph 8.

(2.) The works to which the sale proceeds of old building materials (Rupees 616-7-1) were irregularly credited; and

(3.) The estimates to which the value of the timber (Rupees 2,585) said to have been sold to contractors were charged and recovered.

12. Writing on the 12th ultimo, Mr. Fraser states that my own and the Range Accountants were with him on that and the previous days, and that having looked into the statements prepared by the former, he believes that "they are correct." Mr. Fraser, however, declines to attach his signature to those statements, as, not having really gone through each figure, he is not "quite certain of their accuracy." Mr. Fraser adds that his Head Accountant "vouches for the accuracy of every item except one, to which he demurs on grounds which he has explained." The item of deficiency which is objected to refers to the logs which

are alleged to have been sold to Contractors Nagappa and Ramasawmy for Rupees 2,585, but which I have refused to allow. The grounds of the Head Accountant's objection are stated in the papers accompanying Mr. Fraser's letter No. 201, dated 18th ultimo, herewith forwarded. The facts of the case are briefly as follows:—In the timber yard lists embracing the period as per margin, certain logs, valued at Rupees 2,585, are entered as sold to Contractors Nagappa and Ramasawmy, but the yard issue book contains no note of the transaction, while the log book shows these specific logs as having been issued to works. No payment, moreover, for these logs appears to have been realized at the time, or is at all events noted in the Range Officer's Cash Account. In December 1870, a charge of Rupees 7,007-0-4 is made in the Progress Report against the works noted in the margin for timber, etc., alleged to have been supplied by these contractors; but on careful investigation and on examination of the cash book, it is found that, instead of cheques for the full amount of the contractors' bills being issued, two for Rupees 997-15-8 and Rupees 126-2-3, respectively, or Rupees 1,124-1-11 in all were handed to them, and the difference, Rs. 5,882-14-5, appears as a recovery on account of the three items noted in the margin, and is credited to the Civil Court-house and Magazine. It will be seen however from the remarks entered above that there was no actual sale of the timber noted as the first item, and I have, there fore, struck out the amount (Rupees 2,585) and treated it as "loss."

From June to November 1869.

Civil Court-house and Magazine.

RS.	A.	P.	
2,585	0	0	for timber, the alleged sale of which is objected to.
1,971	8	6	do. the sale of which is admitted.
1,326	5	11	for rod iron, etc., the sale of which is admitted.
5,882	14	5	

13. From all that I have seen of the accounts and from inquiries which I made at Bellary, I am forced to the conviction that wholesale robbery was practised in the Bellary timber yard, and I quite concur in the opinion expressed by Mr. Fraser that Colonel Palmer, the Range Officer, was "cheated" by those around him. Although the *Stock* Account of timber was closed, there is a positive proof that Colonel Palmer was, at least to some extent, aware of the deficiencies brought to notice (*vide* enclosed papers marked I,) and it is yet strange that no report of the loss appears ever to have been made, verbally or otherwise, to the Superintending Engineer, whose fixed station, like that of the Executive Engineer, is *Bellary*. To cover deficiencies, certain works were overcharged with timber never supplied to them, and when it was found that, in some of these cases, the irregular charges caused an undue excess over estimates, recoveries on account of timber were made and credited to those estimates, and the sums so recovered debited, in some instances temporarily, to other works which had either recently been commenced or were not very near completion. In addition to this, advantage was taken of several items of extra receipts, aggregating Rupees 616-7-1, which should properly have been credited to "Revenue Miscellaneous," but which was brought to account as a recovery in favour of the timber deficiency. These irregularities could not, I am convinced, have been carried on without, at least, the cognizance of the Range Officer, and a perusal of the Head Accountant's letter to Colonel Palmer, and of that Officer's reply, both recorded on page 21 of the

accompanying book marked K will show that it was "*usual*" to credit the *timber* account with savings *arising from any cause* on works the estimates for which contained a provision for "timber."

14. As regards the important question arising out of the present investigation, namely, by whom were the frauds leading to the loss of nearly Rs. 28,000 committed, it is difficult to give a direct reply; but I do not hesitate to state my firm conviction that, taking advantage of the laxity of control, and the absence of thorough and effective supervision on the part of the Range Officer, the Head Accountant (G. Streenevassa Row) and Superintendent of the yard (Mansing) either together or in collusion with others clandestinely arranged to have passed out of the yard from time to time quantities of timber which was sold in the bazaar, or otherwise disposed of. Seeing that the Executive Engineer's work is confined to Bellary, it should, it appears to me, have been possible for him to have kept the timber yard well under control, and to have taken stock at regular intervals. Had this been done, and the result of each stocktaking (whether a surplus or deficiency) promptly reported and disposed of, it is not by any means likely that so heavy a loss as Rupees 28,000 would now have to be reported. The circumstance which induces me to link the Head Accountant with the fraudulent transactions under notice is the extraordinary manner in which he endeavoured to cover the deficiencies in the accounts rendered to this office. Charges on account of timber were first made, then recovered either wholly or in part, and subsequently debited to other works on which savings had been effected. In fact, no opportunity favoring his designs was allowed to pass, and this may at once be seen by his treatment of the items of extra receipts already noticed, which he undoubtedly knew were being misrepresented in the Range Officer's accounts. If it be granted that the Head Accountant had a share in these fraudulent transactions, it is clear that he must unquestionably have been aided by the Yard Superintendent in abstracting the timber from the Executive Engineer's stores.

15. The accounts of most of the works to which this deficiency has been charged have long since been closed, but there are a few cases in which the works are still in progress. In these cases it will be necessary to credit the works in question with the amount of the overcharges, and debit the latter to "Profit and Loss." A list of these works, marked L, is enclosed, and it will be seen on reference thereto that the amount overcharged is Rupees 12,303-1-6, which will have to be dealt with in the manner indicated above.

16. In order to arrive at a thorough satisfactory conclusion as to the actual extent of loss which Government have sustained in this matter, I requested the present Range Officer to have the timber in the various buildings measured up and the results reported to this office. It has, however, been found impracticable to comply with this demand, for the reasons explained in Mr. Fraser's letter No. 194 of the 15th June 1872, herewith forwarded.

17. As regards Kamal Saib's claim, it has been most difficult to obtain that full information which is desirable. An investigation is, I understand, now being conducted by the Superintending Engineer and the Executive Engineer in charge of the Bellary Range, the result of which will, no doubt, be reported to

Government in due course; but it is necessary for me here to state that two logs, numbered 16* and 111, which are alleged to have not been delivered by Kamal Saib, do really find a place in the yard log book, and this seems very peculiar. The dimensions of log No. 16 as delivered in the yard are given in detail in the log book, and as regards log No. 111 the log book shows No. 101, but the dimensions of the former (as per Messrs. Binny and Co.'s list) are noted against it, and I observed the entry in red pencil, immediately above 101, of 111. This latter number is stated to have been entered by the Superintending Engineer, Colonel A. S. Moberly, who apparently thought with me that 111 was the proper number. Log No. 101 is entered in Messrs. Binny and Co.'s list received by the Range Officer on the 19th April 1869, while log No. 111 appears in a separate and distinct list received on the 26th idem.

* As per Messrs. Binny and Co.'s list.

In submitting this report I deem it my duty to bear testimony to the very careful and painstaking manner in which T. Venkatapati Naidoo has performed the duty entrusted to him, and in order to mark my appreciation of the service rendered by him on this occasion, I will, at the first opportunity, advance him to such a position on this establishment as his character and ability fully entitle him to.

From the Officer in charge of Bellary Range, to the Controller of Public Works Accounts, dated Bellary, 15th June 1872, No. 194.

I HAVE the honour to inform you that, in order to ascertain the difference, if any, between the quantity of timber charged in our books to the several buildings in the Cantonment and the quantity actually used up in them, I had sixty-five buildings measured by Mr. Supervisor Crowe.

2. In this investigation there arose similar difficulties to those which were met with in the examination of the accounts.

In most of the buildings portions had been done by contract, and other portions departmentally, and it is all but impossible to tell now which should be measured for the present purpose.

Again, the timber in which the deficiency has been discovered was used indiscriminately with other timber which was obtained, wrought from the Public Works Stores, and no one can tell which is which. Of course the truth could be arrived at; but it would take a considerable time to get at it, the whole matter is so complicated; and I doubt whether, under the circumstances, the result would be worth the labour expended.

3. Seeing this confused state of things, and knowing that you wished to send in your report before going on leave, I selected fifteen buildings in which, it was said, little or no timber except that purchased from Messrs. Binny & Co., had been used, and in which all the work had been done departmentally.

4. Mr. Supervisor Crowe has just brought me a statement regarding these fifteen buildings, and to catch this day's post I have only time to send you the result, none to examine its accuracy.

The result is that after adding 25 per cent. to his measured quantities, the deficiency, as compared with the quantity paid for, is 574 cubic feet, which taken at the average rate for departmental work (4½ Rupees a cubic foot) amount to 2,583 Rupees.

5. I beg that you will understand that I know nothing at present of the accuracy of this result, but I have no reason to doubt its truth.

From the Executive Engineer in charge of Bellary Range, to the Controller of Public Works Accounts, dated Bellary, 18th June 1872, No. 201.

I have the honour to forward the following documents connected with timber deficiency :—

(1.) Memorandum of objections raised by the Range Head Accountant to the sum of Rupees 2,585 being added to loss.

(2.) Extract from tappal book showing the two forms of wood accounts devised by the Head Accountant and sent to the Cantonment Overseer on the 6th June 1868 for adoption.

Memorandum.

The sum of Rupees 2,585 being the value of logs sold to Contractors Nagappa and Ramasawmy I object to being added to the amount of loss shown in the general abstract prepared by the Auditor of Controller's Office, on the ground :—

1st.—That the entry was originally made in the monthly yard list rendered to the Range Office. On the receipt of this list a wood abstract was made out, and in accordance with this the accounts were prepared.

2nd.—The second Accountant, who was specially entrusted with the preparation of this abstract, could not inquire into the accuracy of the entries in the yard list, in the face of the express verbal orders from Colonel Palmer not to interfere with the accounts of the yard office, because the Superintendent was personally held responsible for any inaccuracies which might creep into the list.

(Signed) G. STREENEVASSA ROW,

15th June 1872. *Head Accountant.*

Extract from Tappal Book of Bellary Range.

* * * *

6th June 1868. To the Cantonment Overseer Nos. 138, 140 and 141, 6 cheques and 2 forms for wood account.

* * * *

(True Extract.)

(Signed) W. FRASER, c. e.,

18th June 1872. *Executive Engineer, D.P.W.*

A.

Cr. *General Account Current of Receipts and Issues of Timber purchased from November* 1867 *to the end of* 1871-72. Dr.

	Cubic feet.	Rs. A. P.
To timber appearing in the Stock Accounts from the date of Colonel Palmer's assumption of the charge of the range to March 1868 when the Stock Account was closed ...	7,252 11 2	24,266 10 4
,, Do. supplied by Messrs. Abraham and Co.	1,194 11 6	3,309 3 0
,, Do. do. by R. Veeroopatchappa ...	706 4 8	1,782 8 0
,, Do. do. by R. Soobanali	40 3 11½	100 0 0
,, Do. do. by Messrs. Binny and Co. Lots Nos. 1 to 6	24,554 0 0	66,631 9 10
,, Do. do. by Public Works Workshops and Stores and Petty suppliers ...	1,682 3 3	6,573 4 5
	35,430 10 6½	1,02,663 3 7
,, Amount claimed by Carriage Contractor Kamal Saib as per Mr. Fraser's letter, recorded in G. O. No. 574, dated 2nd March 1872	......	1,611 5 7
		1,04,274 9 2
Total...	......	1,04,274 9 2

	Cubic feet.	Rs. A. P.		Rs. A. P.
By value of timber issued to works from the Stock Account (*Vide* Item No. 1 Cr. side) ...	3,580 5 9	12,208 1 10		
,, Do. do. timber supplied by Messrs. Abraham and Co.	970 6 0	3,275 7 0		
,, Do. do. by R. Veeroopatchappa ...	396 1 4	1,782 8 0		
,, Do. do. by R. Soobanali	28 0 7	100 0 0		
,, Do. do. by Messrs. Binny and Co. Lots Nos. 1 to 6	14,345 1 0	39,438 7 11		
,, Do. do. by Public Works Workshop and Stores and Petty suppliers	949 10 3	4,096 12 3	20,270 0 11	60,901 5 0
,, Sale of timber on the Stock Account ...	......	2,273 15 11		
,, Do. from do. supplied by Messrs. Binny and Co. Lots Nos. 1 to 6	......	12,004 8 4	......	14,278 8 3
,, Do. transfers to other ranges from supplies by Messrs. Binny and Co. Lots Nos. 1 to 6	471 10 9¼	1,291 4 0	......	1,291 4 0
,, Amount ordered to be written off to Profit and Loss on account of losses of timber appearing in the Stock Account ...	......	......	......	6,538 2 0
,, Timber on hand from supplies by Messrs. Binny and Co.	306 1 0	1,078 11 6		
,, Do. do. by Public Works Workshop and Stores and Petty suppliers	432 5 4	1,588 6 1	738 6 4	2,667 1 7
,, Loss or deficiency of timber appearing in the Stock Account...	......	3,246 6 7		
,, Do. supplied by Messrs. Abraham and Co.	......	33 13 0		
,, Do. do. by Messrs. Binny and Co. ...	......	12,818 10 1		
,, Do. do. by Public Works Workshop and Stores and Petty suppliers ...	......	888 2 1		
				16,986 14 9
				1,02,663 3 7
,, Cart-hire claimed by Kamal Saib ...	......	......	......	1,611 5 7
Total...	......	......	......	1,04,274 9 2

Summary.

	RS.	A.	P.
Loss as detailed in the foregoing statement	16,986	14	9
Do. if payment be made of amount claimed by Carriage Contractor Kamal Saib	1,611	5	7
Add—			
Charges made against savings on works	5,646	4	9
Do. appearing against the Allipoor tank, disallowed in communication with the Range Officer	544	0	2
Amount which should have been credited to "Revenue Miscellaneous," but was credited to works to cover a portion of the deficiency	616	7	1
Value of logs alleged to have been sold to Contractors Nagappa and Ramasawmy, the transaction relating to which is objected to on the ground that there are no entries in the yard books to support it	2,585	0	0
Total...	27,990	0	4

B.

Statement showing the works against which overcharges appear from the timber which appeared in the Stock Account.

Works.	Amount. RS.	A.	P.
Wash-house, 76th Regiment	1,291	0	0
Sultanpore Camel shed	850	11	0
Toongabuddra Channel (annual repairs)...	700	0	0
Difference between the amount of opening balance as shown in the Stock Account Current for November 1867, and that arrivable with reference to the vouchers produced ...	405	5	7
Total...	3,246	6	7

C.

Statement showing the works against which overcharges appear from the supplies of timber made by Messrs. Abraham and Co.

Works.	Amount. RS.	A.	P.
Punkahs for European Troops	10	2	0
Line shed, Artillery	23	10	0
Total...	33	12	0

D.

Statement showing the works against which overcharges appear from the supplies of timber made by Messrs. Binny and Co.

Works.	Amount. RS.	A.	P.
Native Infantry Hospital	213	9	5
Protestant Church furniture	1,303	11	3
Jail at Bellary	4,560	7	3

Works.	Amount. RS. A. P.
Main Guard	2,849 14 5
Female Hospital	818 10 5
Five new double Latrines	3,463 13 10
Magazine, 3rd-60th Rifles	187 3 0
Jailor's quarters	500 0 0
Total...	13,897 5 7
Deduct value of timber on hand...	1,078 11 6
	12,818 10 1

E.

Statement showing the works against which overcharges appear from the supplies of timber made by Public Works Workshop and Stores and Petty Suppliers.

Works.	Amount. RS. A. P.
Female Hospital (truss wood)	390 0 0
Native Infantry Hospital (do.)	22 11 3
Jail at Bellary (teak rafters)	26 5 10
Court-house (beam)	55 10 7
Jail at Bellary (Nugger wood)	358 14 0
Court-house (forty rafters)	34 8 5
Total...	888 2 1

F.

Statement showing the works on which there were small savings and which were overcharged with Rupees 5,646-4-9.

Works.	Amount. RS. A. P.
Artillery Canteen (November 1867)	87 8 0
Plunge-bath (February 1868)*	125 0 0
Armourers' shop, 76th Regiment (March 1868)	250 0 0
Sultanpore Camel-shed (November 1868)	800 0 0
Native Infantry Hospital (do.)	38 8 0
Putting up windows to the Horse Lines (do.)	30 8 0
Compound wall to Garrison Serjeant Major's Quarters (do.)	20 0 0
Watering trough to a well (do.)	18 0 0
Repairing roof of 20th Regiment building (do.)	15 0 0
Putting up window shutters to the Horse Lines (do.) ...	13 0 0
Providing shelves in the block of buildings occupied by Staff Serjeants (do.)	75 0 0
Supplying arm-racks for stands in the Commissariat Godown (do.)	7 0 0
Do. do. do. do. (do.)	17 8 0
Allipur Tank (December 1868)	44 12 8
Prison Cell to No. 7 Battery (do.)	165 0 0
Jail at Bellary (do.)	280 0 0
Sultanpore Camel-shed (January 1869)	60 0 0

Works.	Amount.		
	RS.	A.	P.
Wash-house, Artillery (January 1869)	16	0	0
Native Cavalry Latrines (do.)	10	8	0
Fixtures to the buildings in the Garrison (do.)	51	0	0
Wash-house, Royal Horse Artillery (February 1869) ...	256	10	8
Fixing iron-barred doors in Prison room, 3rd-60th Rifles (do.)	70	0	0
Drainage European Barracks (June 1869)	200	0	0
Wash-house, Artillery (do.)	250	0	0
Improvements to two Prison rooms, 3rd-60th Rifles (do.) ...	362	0	0
White-washing building, 3rd-60th Rifles (do.) ...	350	0	0
Improvements to two Prison rooms, 3rd-60th Rifles (do.) ...	20	0	0
Improvements to the Superintending Engineer's Office (do.) ...	34	0	0
Bowling Alley, Artillery (do.)	121	6	6
Plunge-bath, Royal Horse Artillery (November 1869) ...	900	0	0
Latrine to the Artillery school (do.)	40	0	0
Ration-shed Artillery (do)	200	0	0
New European Main Guard (do.)	200	0	0
Arm-racks, 3rd-60th Rifles (do.)	20	0	0
Laying down asphalte to the floor of male and female wards (do.)	20	0	0
Grasscutters' well (February 1870)	43	4	0
Putting arm-racks in the Sappers' Quarters (do.) ...	14	4	0
Plunge-bath, Royal Horse Artillery (March 1870) ...	93	5	8
Arsenal gateway (do.)	49	4	0
Drainage, 3rd-60th Rifles (do.)	122	5	8
Store rooms, 16th Regiment (June 1870)	155	7	7
Total ...	5,646	4	9

G.

Statement showing the works that were irregularly credited with the sale proceeds of old building materials.

Work.	Amount.		
	RS.	A.	P.
Native Infantry Hospital	5	8	0
Civil Court-house	126	1	8
Female Hospital	409	14	3
Jail at Bellary	74	15	2
Total ...	616	7	1

H.

Statement showing the works to which the value of the timber (Rupees 2,585) said to have been sold to Contractors were charged and recovered.

Works.	Quantity.			Amount.		
				RS.	A.	P.
Civil Court-house	844	4	7¾	2,322	3	0
Magazine	95	6	10	262	13	0
	939	11	5¾	2,585	0	0

L.

Statement showing the incomplete works against which overcharges of timber appear.

Works.	Amount.	Remarks.
	RS. A. P.	
Jail at Bellary	385 3 10	Public Works Workshop, etc.
Jail at do. Rs. 4,560-7-3. Rs. 1,078-11-6 value of timber on hand	3,481 11 9	Messrs. Binny and Co.
Protestant Church furniture	1,303 11 3	Do.
Main Guard	2,849 14 5	Do.
Female Hospital...	818 10 5	Do.
Five new double Latrines.	3,463 13 10	Do.
Total...	12,303 1 6	

No. 4,605.

MEMORANDUM.

As the official year 1867-68 is fast drawing to a close, and it is desirable that all balances of "Stock" and "Miscellaneous Advances" should be cleared off before that period if possible, the undersigned requests that the in charge of the Range will be good enough to use his utmost endeavours to have these balances cleared off within March, so that no balances need be brought forward in the books of this office for the official year 1868-69 against these heads. In case it be not practicable to have this effected, a report should be forwarded with March's accounts, explaining the causes which have tended to retard such adjustment.

(Signed) P. O'CONNELL, Lieut.-Colonel, R.E.,

13th March 1868. *Controller of Public Works Accounts.*

No. 1 Range, Bellary.
,, 2 ,, ,,
,, 4 ,, ,,
,, 5 ,, ,,
,, 6 ,, ,,
,, 1 ,, Kurnool.
,, 2 ,, Cuddapah.
,, 3 ,, ,,

No. 78. ORDER THEREON, 6th September 1872, No. 2,119.

ACCOUNT, No. 9.

THE inquiry into the timber accounts of the Bellary Range instituted by Government Order No. 574 of 2nd March, has disclosed grave neglect of duty and absence of check on the part of the Superintending Engineer and Range Officer, with the usual result of peculation and fraud on the part of the latter's subordinates, and heavy loss to Government. This latter is estimated by the Controller at Rupees 26,378-10-9, subject to a further increase of Rupees 1,611-5-7 claimed by a Carriage Contractor, and has all been incurred between November 1867, when Lieutenant-Colonel Palmer took

charge of the range, and June 1871, when he went on furlough, and is irrespective of Rupees 6,538-2-0 written off in 1867-68 and 1868-69 by order of Government, the entire nominal value of the timber to be accounted for having been Rupees 1,02,663-3-7, or Rupees 1,04,274-9-2 according as the claim above referred to is proved or disallowed.

2. Of the above sum of Rupees 26,378-10-9, Rupees 16,986-14-9 are characterized by the Controller as "charges to various works on account of timber supplied but not so used, and of which no mention is made in the timber yard accounts. The entries in the Progress Reports are, therefore, fictitious."

3. In addition to this there are two sums of Rupees 5,646-4-9 and Rupees 544-0-2, which though appearing in the Range Accounts and in the timber-yard lists as timber issued to works or sold to contractors have really no connection with such transactions; the first item consisting of sums improperly charged to works on which small savings would otherwise have been shown, and the second having been charged against a tank-work without apparently the slightest pretext and also a sum of Rupees 616-7-1 representing the value of old building materials the sale proceeds of which should have been credited to "Revenue Miscellaneous" but were credited to works to cover a portion of the deficiency in timber. For these the Range Officer is directly responsible; they were made by his orders with the manifest intention of concealing deficiencies known by him from several stock-takings to have arisen. Nothing can justify or palliate such conduct, and therefore on this ground alone the Governor in Council would be justified in dispensing with his services in the Public Works Department; but before taking such a step he resolves that Lieutenant-Colonel Palmer be supplied with a full statement of the case against him, and be called on to submit such explanation as he may have to offer.

4. But there is another item of Rupees 2,585 against the correctness of which the Head Accountant G. Streenevassa Row in vain protests, paragraph 11 of the Controller's report conclusively convicts him of having entered logs of that value as having been sold to contractors, while they were actually appropriated on two specified works, the debits to which are already allowed in the deficit of Rupees 16,986-14-9 first disposed of, and, moreover, no entry of such sale appears in the yard sale book. This fraudulent transaction (of course unknown to the Range Officer) was carried out for the benefit of the Head Accountant and Yard Superintendent Mansing alone; and the Governor in Council directs their dismissal from the public service, and declares them incompetent for future employment in it from the date of this order being received at Bellary, which the Superintending Engineer will notify in due course. It will hereafter be considered whether criminal proceedings shall be taken against them.

5. Notice has already been taken in G. O. No. 1,376 of 3rd June 1872, of Lieutenant-Colonel A. Moberly's mismanagement of the 3rd Division, and his request to be allowed to return to Bellary was negatived in consequence. His conduct in connection with these transactions appears to have been such that unless he can satisfactorily clear himself, the Government cannot entrust him even with the charge of a district under the new organization. The operations of the store yard at Bellary—his own head-quarters—have for years been of a very unsatisfactory character, and ought to have been closely superintended by him. On

one occasion a fire, attributed to incendiarism, occurred; on another a theft, and on several occasions Government have been obliged to write off large sums.

6. There was therefore no lack of warning, but the Government fail to see that Colonel Moberly exercised ordinary measures of supervision, control or precaution. The papers will now be forwarded to him for any observations he may have to make in his own defence.

7. The Acting Superintending Engineer of the 3rd Division will now take active measures for settling the outstanding claim of Rupees 1,611-5-7, satisfying so much of it as the Carriage Contractor can prove, and referring him to the Courts for so much as he is unable satisfactorily to account for. It would also appear necessary that the Controller, in correspondence with the Superintending Engineer and Range Officer, should arrange how the timber accounts shall be finally adjusted, the exact amounts to be credited to completed and incomplete works, and that to be written off to Profit and Loss. The inquiry made by Accountant T. Venkatapati Naidoo of the Controller's Office appears to have been most thorough and searching.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 79. Read the following letter from the Special Executive Engineer, Wynaad, to the Secretary to Government, Public Works Department, dated Vythery, 22nd August 1872, No. 378:—

I HAVE the honour to forward the accompanying revised estimate for Police buildings in Wynaad duly countersigned by Inspector-General of Police.

2. The increase is due in each case to the great rise in the price of iron roofing since the original estimates were framed, and in one case that of No. 1 there was also an error in the measurement of the roof.

3. The subjoined list gives the original and revised estimates; the work on Nos. 1 and 2 has been already completed as emergent, and No. 3 is urgently required.

Description.	Original estimate, *vide* G. O., No. 1,654, dated 9th July 1872.	Revised Estimate.
	RS.	RS.
1. Removing tiles and replacing them with continuous iron sheets over roof of Police Inspector's bungalow and out-houses at Vythery ...	327	467
2. Removing tiles and replacing them with continuous iron sheets over roof of Head Constable's house and out-houses at Vythery	289	368
3. Do. do. Police huts at Nadaganny	266	347
Total ..	882	1,182

No. 80. ORDER THEREON, 6th September 1872, No. 2,120.

CIVIL WORKS, No. 7.

SANCTIONED.

2. The Inspector-General of Police will submit proposals for providing the increased grant required for the works by transfers from other districts.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 81. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Account—General,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 16th August 1872, No. 732 A. G. :—

I AM directed to acknowledge receipt of the abstract of proceedings-account of the Government of Madras for the month of June last, and, with reference to Items No. 182-83 containing a statement of the accounts and results of the Dowlaishweram Workshops for the past year, I am to state, for future guidance, that as these workshops are classed as "Imperial" the annual reports thereon should be submitted to the Government of India.

No. 82. ORDER THEREON, 6th September 1872, No. 2,121.

ACCOUNT, No. 10.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 83. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 21st August 1872, No. 2,203 :—

WITH reference to Government Order No. 1,635 of 6th July 1872, authorizing the employment of three temporary Taluq Overseers, I have the honour to request sanction for a temporary establishment noted in the margin to each of the Overseers, as also travelling allowance allowed generally for Taluq Overseers.

	RS.
1 Writer	15
2 Lascars, at 7 Rupees each	14
	29

No. 84. ORDER THEREON, 6th September 1872, No. 2,122.

ESTABLISHMENT, No. 4.

HIS Excellency the Governor in Council authorizes the entertainment of the establishments applied for by Lieutenant-Colonel Moberly during the current official year from the grant for temporary establishments.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 85. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 10th August 1872, No. 1,777 :—

ADVERTING to G. O. No. 94, dated 14th November 1871, I have the honour to forward, herewith, a revised estimate, amounting to Rupees 15,850, for constructing a first-class Taluq Cutcherry and Subsidiary Jail at Rajahmundry as per revised design which accompanied G. O. No. 232, dated 23rd April 1872, and request you will be good enough to obtain the sanction of Government for the same; funds to the extent of Rupees 8,000 have been provided in the Provincial Budget for the current year for these buildings.

1 Estimate.
1 Specification.

2. I beg to add that the thickness of the wall has been increased by 3″, as it is intended to use stone instead of brick, whereby there would be a saving in the cost of the building.

3. The walls of all these buildings are much too slight for the kind of work we can get in India, and having numberless doors and windows in them there is little enough material left to support the roof; at the same time I beg to point out that no sort or kind of ventilation has been provided in any of these standard designs, which is a great want in such a climate as this.

No. 86. ORDER THEREON, 6th September 1872, No. 2,123.

CIVIL WORKS, No. 8.

THE Government sanction the estimate of Rupees 15,850 for the construction of a Taluq Cutcherry and Subsidiary Jail at Rajahmundry on the standard design. The submission of the further estimate for the out-buildings should be expedited, and steps taken for the utilization of the entire grant for the work.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 87. Read the following letter from the Acting Deputy Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 24th August 1872, No. 441 :—

I HAVE the honour to forward five registers (to be returned) received from the Collector of Tinnevelly showing land taken up under classes* A, B, and D for the termini of Tinnevelly and Tuticorin on the Southern Extension of the Great Southern of India Railway.

* *Tuticorin Terminus.*	RS.	A.	P.
A	31,553	15	4
B	961	10	8
D	89	2	8
Total ..	32,604	12	8
†	28,750	1	8
Grand Total...	61,354	14	4

Tinnevelly Terminus.			
A	28,295	1	8
B	455	0	0
Total...†	28,750	1	8

2. I request that you will be so good as to obtain the sanction of Government to the disbursement of Rupees 61,354-14-4.

3. The charge can be met from the sum of Rupees 1,00,000 provided for the Tinnevelly District in the Budget of 1872-73.

No. 88. ORDER THEREON, 6th September 1872, No. 2,124.

RAILWAY, No. 16.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 89. Read the following letter from the Special Executive Engineer Wynaad, to the Secretary to Government, Public Works Department, dated Vythery, 20th August 1872, No. 369 :—

I HAVE the honour to request permission to entertain Mr. J. Brown as an Overseer on the permanent strength of the establishment in Wynaad, special application being necessitated owing to Mr. Brown being beyond the age of twenty-five, and not having regularly qualified as Overseer.

2. Mr. Brown is twenty-nine years of age and has been employed since 1866 on the Petty Establishment, his duties having been similar to those of an Overseer. Although he has not passed the regular qualifying examination at Madras, he has proved his ability to estimate, level, and survey with prismatic compass and chain, and I have also satisfied myself as to his knowledge of mensuration and such other rules as would be necessary in the carrying out of his executive duties. His performance of his work has uniformly given me perfect satisfaction ; he is active, steady, attentive to his duties, and thoroughly trustworthy ; his general health is also good.

3. Early orders are respectfully solicited, as on Mr. Potter's departure from South-East Wynaad, I shall be obliged to entrust the charge of that part of the

range temporarily to an Overseer belonging to North Wynaad, whose experience is too short to make it desirable that he should yet be employed so far from the direct supervision of a Range Officer.

No. 90. ORDER THEREON, 6th September 1872, No. 2,125.

ESTABLISHMENT, No. 5.

MR. J. Brown will be brought upon the permanent establishment of the Public Works Department for employment in Wynaad from the date on which the new arrangement of ranges in that district comes into operation.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 91. Read the following Circular letter from the Government of India, Public Works Department, (Account—Irrigation,) to the Governments of Madras, Bombay, Bengal, the North-Western Provinces, and the Punjab; the Chief Commissioners of Oudh, Central Provinces, British Burmah, and Mysore and Coorg; the Resident at Hyderabad; the Agents to the Governor-General for Central India and Rajpootana; and to the Superintendent of Port Blair and Nicobars, dated Simla, 13th August 1872, No. 40:—

WITH reference to Public Works Department Circular No. 80 of 1871, I am directed to state that the following additional sub-heads are to be made to the classification of expenditure on Capital Account of Irrigation Works.

* e—Irrigation Outlets.
† d—Irrigation Outlets.
‡ 9—River or protective embankments.
§ 7—River or protective embankments.

* Under C—Masonry Works. 1—Main Canals and Branches.
† Under C—Masonry Works. 2—Distributing Channels.
‡ Under C—Masonry Works.
§ Under D—Earthworks.

(Signed) P. O'CONNELL, Lieut.-Colonel, R. E.,
Offg. Deputy Secy. to the Govt. of India.

No. 92. ORDER THEREON, 6th September 1872, No. 2,126.

IRRIGATION, No. 3.

CIRCULATED to the Superintending Engineers and the Controller with reference to G. O. No. 1,102, dated 30th April 1872.

(Signed) G. W. WALKER Colonel R.E.,
Secretary to Government.

No. 93. Read the following Proceedings of the Board of Revenue, dated 15th August 1872, No. 1,593 :—

From the Commissioner of the Neilgherries, to the Secretary to the Board of Revenue, dated Ootacamund, 27th July 1872, No. 84.

I HAVE the honour to submit my report on the Department Public Works' transactions in this district for the year 1871-72.

2. The expenditure as compared with the grants during the year stands thus :—

——	Grant.	Expenditure.
	RS. A. P.	RS. A. P.
New Works	91,267 10 3	91,451 15 10
Repairs	52,404 0 0	52,323 15 4
Total...	1,43,671 10 3	1,43,775 15 2

3. This expenditure was distributed as follows :—

		RS. A. P.
	New Works.	
1.	Military	29,092 5 11
2.	Civil Buildings	11,200 5 9
3.	Communications	12,571 0 5
4.	Miscellaneous Public Improvements	10,703 9 6
5.	Tools and Plants	800 0 0
6.	Establishment	27,084 10 3
	Total...	91,451 15 10
	Repairs.	
7.	Military	8,925 11 9
8.	Civil Buildings	4,053 10 8
9.	Communications	37,765 6 5
10.	Miscellaneous Public Improvements	949 2 6
11.	Tools and Plants	630 0 0
	Total...	52,323 15 4
	Grand Total...	1,43,775 15 2

4. No expenditure was incurred under the head "Agricultural."

5. I note the following details :—

NEW WORKS—*Military—Expenditure Rupees* 29,092-5-11.—Of this sum Rupees 25,152-5-11 were spent upon the Lawrence Asylum; a large dining-hall (105' × 40') with store-rooms underneath; a School Library and Reading-room each (19' × 18'), the main staircase, and other passages and staircases, the latrines and wash-houses, the covered play-ground (364 square yards) together with the Masters' cook-rooms, were completed and handed over to the Principal. The present strength of the Boys' School is 346; this includes 250 boys received into the Asylum in September last. Four acres of rough swamp land were reclaimed and levelled for an open play-ground for the boys. The fresh designs

with estimates for the construction of the hospital into a branch for 300 girls, and the buildings on the female site into hospitals, with attendants' quarters, etc., for both branches, were prepared and submitted; but the orders of the Government of India have not yet been received. The balance of the expenditure, Rupees 3,940, was laid out in the construction of latrines and drains at Wellington.

Civil Buildings.—The 1,000 Rupees allotted for the masonry drop for the lake sluice was spent in procuring bricks and stone. The old escape of the lake was so completely destroyed, in the heavy storm in November last, that an estimate for re-constructing the sluice and channel, and making the drop steps and revetments of mortar masonry, received the sanction of Government. The work has been begun and will be completed before the heavy rains. Of the balance, Rupees 2,000 were given as a grant-in-aid for the re-construction of the dome of the Roman Catholic Church. Three hundred and seventy Rupees for enclosing part of the Engineer's yard, Ootacamund, and 100 Rupees for the repairs of Sub-Magistrate's Cutcherry, Coonoor.

The Commissioner's Office, etc., was re-roofed, and continuous iron-sheeting placed underneath the tiles. The roof is now perfectly water-tight. A light iron verandah (106′ × 10′) was also constructed on the south side of the building for protection from the weather, of people resorting to the Courts and Offices.

	RS.	A.	P.
Repairs	3,200	2	1
Verandah	753	10	7

Upon Stonehouse Rupees 3,776-9-1 were also spent. The roof was entirely re-constructed, and fresh pavement laid down in the out-offices. The premises were also white-washed, oiled, and painted throughout, and dignified by the erection of a flag-staff, a single pole of Australian gum 90 feet high.

Communications.—The expenditure, Rupees 9,000, under this head was principally upon the new Coonoor Ghaut Road. Parapet walls, in all two miles in length, were constructed at intervals along the most dangerous parts of this road; seven miles also of the road have been widened and improved, and there remains now but one spot for which repairs are urgently needed, and these will be effected shortly.

Rupees 1,000 were also expended upon the road from Yellenhully Chuttrum to Kartairy. Twenty stone drains, and three miles of catch-drains were made, and 1¾ miles of the road widened. The road is now nearly half completed. Upon the Kotagherry Ghaut New Road, Rupees 2,341-0-5 were spent; the line was traced and surveyed. The ghaut is twenty miles in length with a gradient of 1 in 17, and has only three zigzags. The surveys and estimates have been approved by the Local Fund Board and Government. The money was spent upon the lower portion near Mettapollium, seven miles in length, where the old track is worst. Should the road be proceeded with, every effort will be made to open out these seven miles for bullock traffic during the year.

Four miles of the road starting from Kotagherry were opened last year. The work is at present at a stand-still until the Planters have assured the Board of the payment of the promised contribution of Rupees 3 per acre of cultivation.

Miscellaneous Public Improvements, Rupees 10,703-9-6.—The most important work falling under this head is the Ootacamund water-supply. It will be remembered that the Southern Channel was completed in 1870-71 and the main works of

the Northern Channel, but during the early part of 1871-72 no funds were available. In May, however, there were heavy rains; these caused the Snowdon tunnel in some places to fall in, and consequently it was found necessary to line the tunnel (370 feet long) with masonry. This has been done, and it only now remains to build up the south lining walls. Near St. Stephen's Church a masonry drop (73 feet long) with seventeen steps has been constructed, the height vertically is 36 feet.

At the Marlimund Reservoir it was found necessary to construct a masonry drop 128 feet long with twenty steps. The fall vertically is 49 feet. This work was necessary in order to let out the water for clearing the lake. I would mention that the south channel has worked well, and the supply of water has sufficed. The northern part of the town will, it is hoped, receive pure drinking water by the north channel in October next. The cost of distribution is being borne by the Municipality. Cisterns have been constructed at their cost, and already 300 yards of earthenware piping has been laid down, and they propose to lay down similar piping to the extent of nearly a mile.

No great progress has been made with the Ootacamund Lake Reclamation Scheme, as the convicts were otherwise engaged. However, a sum of 2,600 Rupees was spent upon this undertaking during the year. Three acres of land were reclaimed; a masonry drain of 30 running feet was constructed near Abdool Kawder's shop; and 300 running yards of road in the same neighbourhood were levelled, drained, and metalled.

Over and above this a quarter of a mile of road leading from Gool Mohamed's shop into the bazaar was excavated and levelled, and the earth used for the lake reclamation.

The reclamation of the marsh near Allamby's was completed during the year; swamp to the extent of twenty acres has now been reclaimed in Ootacamund; two hundred and seventy running yards of the supply channel revetted with stone; and a sluice has been constructed for lowering the waters of the lake, so as to admit of the swampy and marshy parts at the head of the lake being cleaned and cleared of weeds and refuse.

REPAIRS—*Military Buildings.*—The amount expended on repairs to Military Buildings was Rupees 8,925-11-9, of which Rupees 1,785-6-5 pertain to the Lawrence Asylums at Ootacamund.

Repairs to Civil Buildings cost Rupees 4,053-10-8. The principal items of this expenditure are Rupees 1,260-15-9 laid out in repairs to the terraced roof of the European Prison, and Rupees 500-6-11 in re-tiling and white-washing the Public Offices at Coonoor. Among minor repairs are included those to the Ootacamund, Coonoor, and Kotagherry Churches, and those to the Government Buildings at Ootacamund known as "Lower Norwood."

Communications.—Rupees 33,328-1-4 is the total expenditure on the roads of the district as particularized below:—

	RS.	A.	P.
Station roads of Ootacamund, Coonoor, and Wellington ..	3,959	15	9
Road from Coonoor to Kotagherry	1,319	15	0
Do. Ootacamund to Kotagherry	1,320	0	2
Do. Ootacamund to Tippecadoo *via* Seegoor Ghaut ...	2,856	15	10
Do. Coonoor to Ootacamund (new)	2,639	15	7
Do. do. (old)	1,099	15	7

	RS.	A.	P.
Road from Ootacamund to Goodaloor	3,303	1	3
New Coonoor Ghaut	9,824	15	10
Old do.	990	0	0
Road from Ootacamund to Deva Sholah	1,320	0	0
Do. Kartairy to Ootacamund	280	0	0
Do. Kartairy to Colacumbie	280	0	0
Do. Kotagherry to Kodanad	329	15	5
Kotagherry Ghaut	1,624	15	2
Road from Ootacamund to the Avalanche Bungalow	528	10	5
Do. Coonoor to Dolphin's Nose, *via* Lady Canning's Seat.	660	0	0
Do. Coonoor Ghaut to Hoolicul	550	0	0
Do. Coonoor to Kartairy	439	9	4
Total ..	33,328	1	4

This money was laid out upon 233 miles of road and bridle-paths. Seventy-eight miles of the road were metalled with granite, and 144 miles made and bridged but not metalled.

The heavy rains of 7th November last did some damage to roads in different parts of the district and necessitated emergent repairs. The following expenditure occurred:—

	RS.	A.	P.
On toll-houses	98	0	0
On emergent repairs to roads	389	5	1
Cost of surveys and estimates	250	0	0
Re-construction of the Cold Stream Bridge	500	0	0
Re-roofing the Travellers' Bungalow at Neddivuttum	3,000	0	0
Repairs to Chuttrum	200	0	0
Total...	4,437	5	1

The bridges at Kartairy, Kotagherry, Pykara, and Seegoor sustained more or less injury from the rains in November.

Rupees 3,000 were expended in re-roofing with continuous iron under-tiles the Neddivuttum Bungalow and out-houses attached. The completion of this very necessary work will no doubt make the bungalow a more frequent resort of the Wynaad Planters than it has hitherto been.

Miscellaneous Public Improvements.—Rupees 949-2-6 were spent in repairs to the escape weir of the Lawrence Asylum Lake Bund which the rains of November damaged considerably, and Rupees 630 on *Tools and Plants.*

Submitted for the information of Government.

2. There is nothing in the report to call for any special remark from the Board of Revenue.

3. The results of the expenditure will be patent to His Excellency in Council.

No. 94. Order thereon, 6th September 1872, No. 2,127.

CIVIL WORKS, No. 9.

Progress with the Ootacamund Lake Reclamation has not been satisfactory, and His Excellency the Governor in

Council observes from this report that the convicts were otherwise engaged, and he desires to be informed on which of the other works for which their labour was given to the Municipality, as detailed in G. O., No. 1,302, of 19th September 1871, Judicial Department, they were employed.

2. The neglect of the bridle-paths around Ootacamund, and on the hills generally, has attracted the notice of His Excellency in Council, and he understands that it has arisen from the discontinuance of an allowance of Rupees 1,500 for Hill Roads which was first granted when Lord Dalhousie was resident on the Neilgherries, and which used to be laid out in the proportions of Rupees 500, Rupees 350, and Rupees 150 for bridle-paths in connection with Ootacamund, Coonoor, and Kotagherry respectively. A reference will be made to the Financial Department to ascertain whether the Provincial grant to the Neilgherries cannot be augmented permanently to the extent of the small sum required for maintenance of bridle-paths.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 95. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 22nd July 1872, No. 1,496:—

WITH reference to G. O. of the 17th June 1872, No. 1,496, I have the honour to forward copies of letters from the Executive Engineers in charge of the Delta Ranges showing that for all practical purposes an entire new form of progress report has to be prepared for the Controller monthly with office copy, etc., entailing very unnecessary labour on the Range Office establishments, and affording no better information than the old one. The Government of India in Circular No. 420-I, dated 4th June 1872, transmitted with G. O. of the 4th July 1872, No. 1,620, have adopted the Madras form of progress report for the quarterly reports required to be furnished to them for all works executing from loan funds, and as they never required us to adopt the form ordered by the Controller in his Circular No. 179, dated 19th April 1872, I beg to submit the Government of India do not apparently wish to interfere with the forms we have used before, particularly as they have already declared certain other forms not applicable to this Presidency.

1 Copy of letter No. 263, dated 17th July 1872, from Executive Engineer, No. 1 Range, Godavery.
1 Copy of letter No. 133, dated 13th July 1872, from Executive Engineer No. 3 Range, Godavery.

G. O. No. 1,521, dated 21st June 1872.

No. 96. ORDER THEREON, 7th September 1872, No. 2,128.

ACCOUNT, No. 11.

IN his letter No. 1,496, dated 22nd July, the Superintending Engineer of the 1st Division suggests the discontinuance of the use of the new form of progress reports for the Godavery Delta, (the adoption of which was directed in G. O. No. 1,310 of the 14th May,) on the

plea that the new form affords no better information than the old one, while its preparation entails considerable extra labour on the part of the establishments attached to the ranges. The Superintending Engineer appears to be of opinion that the new form of progress report was introduced by the Controller; in this, however, he is mistaken; his attention is called to G. O. No. 1,310, dated 14th May, in which the adoption of the new form is directed. The above order has been approved by His Excellency the Governor-General in Council, who is desirous that the new forms of accounts should be introduced in their integrity into this Presidency at as early a date as possible. Under these circumstances His Excellency the Governor in Council cannot accede to the Superintending Engineer's request that the use of the new form of progress report shall be discontinued.

G. O., No. 1,192, dated 30th April 1872.

2. In the copy of the progress report submitted to the Superintending Engineers, only such details need be furnished as they may require under G. O. 1870, dated 8th August.

3. The Superintending Engineer calls attention to the fact that the Supreme Government have lately introduced a simple form in which the record of the quarterly progress of Agricultural Works under execution from the Extraordinary grant shall be submitted to them, and hence concludes that the new form of progress report, to which he takes exception, cannot have been introduced under orders from the Supreme Government. The cases are in no way analogous. In the one case the Government of India do not desire to be furnished with such detailed information as, in the other, they deem it essential the Controller should be supplied with.

4. This Government have already in their Order No. 1,450, dated 12th June, recorded their opinion that all information which can possibly be required relative to large works in progress can be obtained from Form BBI. The Superintending Engineers will report whether they are of opinion that their offices will in any way be relieved by the adoption of the old form of progress report and the submission to the Controller of an extract from the register of works Form BBI month by month, for the works for which the new form of progress report has been ordered to be introduced. The Controller will state any objections he may wish to raise against the arrangement suggested.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 97. Read the following Endorsement of the Chief Secretary to Government, dated Ootacamund, 22nd August 1872:—

Proceedings of the Board of Revenue, dated 16th August 1872, No. 1,608.

From the Acting Collector of Ganjam, to the Secretary to the Board of Revenue, dated Chetterpore, 27th July 1872, No. 1,420.

REFERRING to Board's Proceedings, dated 11th July 1872, No. 1,292, I have the honour to forward copy of a letter from the Junior Assistant Agent, dated

5th instant, No. 104, asking permission to spend a portion of the road grant for the repair of the roof of the bungalow at Baliguda.

2. Captain Smith was not aware when he wrote of the full extent of the destruction which had befallen Maliah Public Works as subsequently reported.—*Vide* my letter, dated 22nd instant, No. 1,370.

3. I fear the grant already made will be utterly insufficient for roads alone. I trust that the Government may, with reference to the Board's Proceedings quoted above, have been able to supplement the Budget allotment. Until Baliguda is made accessible we cannot know the precise extent of the damage done, but it can hardly be expected that any house could stand unhurt under 57 inches of rain.

4. I think the best method is to allow Captain Smith to use the funds which Government may place at his disposal in such a way as he may find most necessary when he returns to Baliguda.

ENCLOSURE No. 1.

From the Junior Assistant Agent, Russelcondah, to the Agent to the Governor in Ganjam District, dated 5th July 1872, No. 104.

I HAVE just heard from Baliguda that, between the 23rd and 28th June, 29 inches and 20 cents of rain fell. Almost all the bridges on the main No. 1 Bandy-road have been washed away, and I hear that the roof of the bungalow at Baliguda, built by Government for the Junior Assistant Agent and Assistant Superintendent of Police, leaks very much all over. It was in pretty fair order last rains.

2. It is impossible to touch it now till the rains are over, and I fear the building may suffer a good deal. The roof ought to be put in thorough repair before next rains. It has not been touched since it was tiled in 1869. I fear there will be no funds available now for this purpose. I have, therefore, the honour to request that you will request Government to sanction my spending out of the allowance for "new roads in the Maliahs" whatever sum may be necessary to put the building in thorough repair next cold season.

SUBMITTED for the orders of Government.

2. The Board support the recommendation made.

TRANSFERRED to the Public Works Department, with reference to G. O., dated the 25th July 1872, No. 976.

(Signed) R. S. ELLIS,
Chief Secretary.

No. 98. ORDER THEREON, 7th September 1872, No. 2,129.

ACCOUNT, No. 12.

THE Governor in Council observes that, since the date of the Assistant Agent's application, a sum of Rs. 5,200 for the maintenance of roads in the Maliahs has been sanctioned in addition to the Budget provision of Rupees 5,350 for new roads. His Excellency in Council has no objection to the appropriation of a portion of these grants to the repair of the Baliguda Bungalow.

G. O., Financial Department, No. 976, 25th July.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 99. Read the following letter from the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Camp at Kalkada, 11th August 1872, No. 1,045 :—

WITH reference to G. O. No. 2,790 under date the 21st November 1870, I have the honour to forward a copy* of Lieutenant Taylor's explanation regarding the purchase and repair of a tent he had purchased in 1868 when in charge of the Cumbum Range.

* Letter No. 486, dated 30th July 1872.

2. It does not appear that any repairs were made since the last expenditure referred to in paragraph 9 of Colonel Moberly's letter printed with G. O. above quoted, and as a period of from two to four years has elapsed since the purchase of the tent and the time the expenditure had been incurred in its repair, I think the matter may be allowed to drop, and the entry in the divisional list of unanswered letters omitted from future lists.

From Lieutenant R. F. TAYLOR, R. E., Officer in charge of Kurnool Range, to the Superintending Engineer, 3rd Division, dated 30th July 1872, No. 486.

IN reply to G. O. No. 2,790, dated 21st November 1870, demanding an explanation regarding a tent purchased by me in 1868, I have the following remarks to offer.

2. I purchased a good second-hand tent from Captain Cox, I think, for 80 Rupees, this being by far *the best of several tents which I saw and personally inspected when in Kurnool.**

* I tried to get a bechoba, but there were none to be had. I cannot understand Colonel Moberly's remarks about not making inquiry, etc. I purchased the tent after I had seen it pitched along with several others; the price asked for it was Rupees 150.

3. The tent was used on an average twenty days in every successive month for two and twenty months, and as might reasonably be expected was by the end of that time considerably out of repair. My own tents were in bad condition; but as I could not have all repaired at once, and judging that by using mine and repairing the range tent I would be best serving the interests of Government, I sent in an estimate for sanction and commenced repairs in anticipation. The work was cheaply executed, and the tent was certainly worth the expenditure. Mr. Hudson has, I think, put a very low valuation on the property; at any rate about the time Mr. McCarthy purchased mine for Rupees 250, and, in my opinion, the one belonging to the range was a far better one, I saw several dozens of tents but lately in Madras and Kurnool priced from Rs. 150 to 350, and I can honestly say that not one of them was equal to the range tent.

4. The remark (in paragraph No. 5 of Colonel Moberly's letter) was not written by me; at least I have not the faintest recollection of having penned the words. I remember distinctly being asked by one of the Revenue Survey Officers to dispose of the tent to him.

5. In repairing the tent without sanction, I no doubt acted too hastily (and am quite willing to suffer the consequences); my only reason in doing so was to save further damage* being done to it.

* A terrific storm in the early part of 1870 swept over Cumbum Range; all the tents were terribly damaged by it, hence the real cause of the great expenditure. My tents in repair on this occasion cost me Rupees 220. Mr. Meniman's tents were blown to shreds and he offered to purchase the range tent for Rupees 80, though at the time it was in bad condition, it stood out the storm better than any other tent, and chiefly for this reason I determined to have it repaired.

6. In conclusion, I beg to observe that I acted to the best of my ability and judgment in this matter; but should Government arrive at a different conclusion, I shall be most happy to refund the whole amount, namely, Rupees 125.

No. 100. ORDER THEREON, 7th September 1872, No. 2,130.

ESTABLISHMENT, No. 6.

LIEUTENANT Taylor's explanation is accepted, and the subject may be removed from future Unanswered Reference Lists.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 101. Read the following paper from the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 27th August 1872, No. 1,166:—

IRRIGATION BRANCH OF DEPARTMENT PUBLIC WORKS.

MONTHLY Appropriation Return for June 1872, showing the state of the grants at the end of the month as per Budget Register.

Part I.—Grants for Main Heads of Service.

Heads.	Amount at credit at the beginning of the month.	Additions made during the month.	Total.	Reductions made during the month.	Amount at credit at the end of the month.
IMPERIAL GRANTS.	RS.	RS.	RS.	RS.	RS.
CAPITAL ACCOUNT.					
Extraordinary.					
Irrigation Works	8,77,000	...	8,77,000	...	8,77,000
Establishment	2,01,800	...	2,01,800	...	2,01,800
Tools and Plant...	21,200	...	21,200	...	21,200
	11,00,000	...	11,00,000	...	11,00,000
Ordinary.					
Irrigation Works	3,64,895	...	3,64,895	...	3,64,895
State Outlay on Guaranteed Irrigation Works	66,305	...	66,305	...	66,305
Establishment	56,000	...	56,000	...	56,000
Tools and Plant...	4,000	...	4,000	...	4,000
	4,91,200	...	4,91,200	...	4,91,200
Total, Capital Account ...	15,91,200	...	15,91,200	...	15,91,200
REVENUE ACCOUNT.					
Ordinary.					
Repairs, etc., to Irrigation Works.	13,60,000	...	13,60,000	...	13,60,000
Establishments ... 3,57,123 / Conservancy do. ... 97,677 }	4,54,800	...	4,54,800	...	4,54,800
Tools and Plant...	19,000	...	19,000	...	19,000
Total Revenue ..	18,33,800	...	18,33,800	...	18,33,800
Total, Extraordinary and Ordinary Irrigation	34,25,000	...	34,25,000	...	34,25,000

Details of Additions and Reductions of Main Heads during the month.

Nil.

Part II.—Appropriations against Minor Works Grant.

Heads.	Amount of grant un-appropriated at the beginning of the month.	Additions and reductions by transfers.			Balance as modified	Appropriations.			Balance of grant un-appropriated at the end of the month.
		Additions during the month.	Total.	Reductions during the month.		Minor Works.	Major Works.	Total.	
IMPERIAL. *Ordinary.*	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS	RS.
Irrigation Works ...	1,18,132	......	1,18,132	......	1,18,132	5,049	64,742	69,791	48,341

Part III.—Appropriations against grant for Repairs.

Heads.	Amount of grant un-appropriated at the beginning of the month.	Additions and reductions by transfers.			Balance as modified.	Appropriations during the month.	Balance of grant un-appropriated at the end of the month.
		Additions during the month.	Total.	Reductions during the month.			
Repairs, etc., to Irrigation Works ...	RS. 5,32,286	RS.	RS. 5,32 286	RS.	RS. 5,32,286	RS. 94,402	RS. 4,37,884
Tools and Plant, Extraordinary ...	19,928	......	19,928	......	19,928	......	19,928
Do., Ordinary...	21,511	......	21,511	......	21,511	442	21,069

Abstract of Parts II. and III.

	PART II. Appropriations.		PART III.
	Minor Works.	Major Works.	Appropriations.
	RS.	RS.	RS.
April 1872	30,116	5,000	5,92,040
May ,, ...	8,567	3,000	2,35,674
June ,, ...	5,049	64,742	94,402
	43,732	72,742	9,22,116
	72,742	......	......
Total Grant ...	1,16,474	......	......
	1,64,815	......	13,60,000
Unappropriated Balance, 31st May 1872	48,341	......	4,37,884

Statement of unauthorized appropriations made during the month of June 1872.
Nil.

No. 102. ORDER THEREON, 7th September 1872, No. 2,131.

ACCOUNT, No. 13.

COMMUNICATED to the Accountant-General of the Public Works Department.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 103. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Dharapuram, 22nd August 1872, No. 114 :—

I HAVE the honour to forward, for the orders of Government, a memorandum from the Controller of Public Works Accounts, No. 122, dated 12th August 1872, disallowing the railway fare of a horse from Bangalore to Beypore claimed by Captain H. W. Wood, R.E., Executive Engineer, on his transfer to the Calicut Range.

Captain Wood's letter.
Controller's list of disallowances with one contingent bill.

2. The circumstance under which the claim is made is fully detailed in Captain Wood's letter No. 168 of 16th August, which I beg to forward for the information of Government.

From Captain H. W. WOOD, R.E., Executive Engineer, Calicut, to the Superintending Engineer, 7th Division, dated Calicut, 16th August 1872, No. 168.

I HAVE the honour to forward a list of disallowances from my contingent bill* of travelling charges for the month of July, made by the Deputy Controller of Public Works Accounts.

*Enclosed.

2. The charge made by me is for the carriage of one horse by rail from Bangalore to Calicut. This charge I am informed is inadmissible without the special sanction of Government, and this sanction I beg you will be so good as to obtain.

3. The facts are that, on my transfer to Calicut from Bangalore, I purchased three Pegu ponies, which I was informed was the sole description of animal suited to the climate of Malabar and sold my other cattle.

4. Two animals I was unable at the time of my leaving Bangalore to bring with me, as they remained behind to allow of their being broken in ; so that I suppose I shall have to pay for the carriage of these myself. The third is the one charged for in the contingent bill, and having brought him down with me, I am enabled to sign the certificate that the charge by rail was *boná fide* incurred.

No. 104. ORDER THEREON, 7th September 1872, No. 2,132.

ACCOUNT, No. 14.

THE Controller of Public Works Accounts is authorized to pass the bill submitted by Captain Wood for the carriage of a horse by rail from Bangalore to Beypore.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 105. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 6th July 1872, No. 1,325.

ADVERTING to paragraph 3 of G. O. of the 14th May 1872, No. 1,286, I have the honour to forward copy of a letter from the Assistant Engineer in charge of No. 6 Range showing that it is not practicable to embank the Thovigedda drain, Mr. Hannan has consequently

2 Plans.
2 Estimates.
1 Comparative Statement.
1 Copy of letter from Assistant Engineer, No. 115, dated 15th June 1872.

estimated for the design proposed for a sluice by the Acting Chief Engineer for Irrigation; the cost of this is Rupees 16,970, and it will be seen the cost of the sluice as proposed before was Rupees 10,970, so that the excess is 55 per cent.

2. As it occurred to me that a work could be designed without such a width of arch as that proposed by the Acting Chief Engineer, and also without exposing so much of the embankment and roadway to the action of the river floods and waves, I beg to submit a plan and estimate, amounting to Rupees 14,750, for carrying the roadway in the ordinary manner over a bridge; in this estimate I have included the cost of concrete foundations such as we usually put down.

3. I have to explain, with reference to paragraph 2 of the Note of the Acting Chief Engineer, that, in the original design, the piers were constructed above the sluice arches, and filled in between with gravel, their thickness of 2 feet was, therefore, of no importance; the planking will be altered to 4 inches as proposed in paragraph 4. Whilst heavy floods prevail in the Godavery river, there is very little or no drainage running into it from this district; as far as our experience goes, generally speaking, the heavier the flood in the river the clearer is the weather here. I think, therefore, the design will answer for all purposes—my only doubt is, if an arch so flat as $\frac{1}{6}$ the span, and 50 feet wide, and only 18 inches thick *throughout* can be so well built in this country as it ought to be, particularly as the extrados will be liable to have at times a considerable quantity of wet earth on it.

4. Mr. Hannan shows that the Thovigedda drain cannot be embanked, as the land slopes away from the river along its banks, and the length of the embankment required, probably 18 miles, would be far more expensive than the sluice even as now estimated for from the design sent up here.

From the Acting Superintending Engineer, 1st Division, to the Chief Engineer for Irrigation, dated Dowlaishweram, 12th August 1872, No. 1,801.

WITH reference to your letter No. 125, dated 19th July 1872, I have the honour to forward herewith a revised estimate amounting to Rupees 13,200 and the plan of the sluice over the Thovigedda drain, with the alterations as suggested in your letter under reference duly carried out; but I beg to observe the original design provided for the discharge of only $\frac{1}{4}$ inch in twenty-four hours from the whole drainage area, and not for $\frac{1}{2}$ inch in one hour and 6 inches in twenty-four hours; I am, therefore, of opinion that the design should not be reduced.

No. 105A. No. 168.

Note by the Acting Chief Engineer for Irrigation.

IN G. O. No. 1,286, dated 14th May 1872, the Superintending Engineer of the 1st Division was directed to submit certain information relative to the Thovigedda drain to admit of its being determined whether it would be more economical to embank the stream and to provide a bridge where the river embankment meets the stream, or to provide a head-sluice by which the flood waters in the river might be excluded from the drain. From the information supplied by the Superintending Engineer, it would appear that the latter arrangement would be the

more economical, and an estimate of Rupees 12,000 for the sluice is submitted for the sanction of Government. The sluice provides amply for the discharge of rainfall over the area of 375 square miles drained by the Thovigedda.

2. The original estimate for the sluice amounted to Rupees 10,970, while the revised estimate amounts to Rupees 12,000. The estimate for the road will now be Rupees 47,330 instead of Rupees 46,300.

OOTACAMUND, (Signed) R. F. OAKES, Major, R.E.,
27th August 1872. *Acting Chief Engineer for Irrigation.*

No. 106. ORDER THEREON, 7th September 1872, No. 2,133.

IRRIGATION, No. 4.

HIS Excellency the Governor in Council sanctions the revised estimate of Rupees 12,000 for a sluice at the mouth of the Thovigedda drain on the road from Rajahmundry to Rahitapuram along the east bank of the Godavery.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 107. Read the following Endorsement of the Acting Chief Engineer for Irrigation, dated Ootacamund, 20th August 1872, No. 30 :—

From the Acting Manager of the Madras Irrigation and Canal Company, to the Acting Chief Engineer for Irrigation, dated Madras, 10th August 1872, No. 197.

IN compliance with the request contained in your letter No. 51 of the 5th instant, I have the honour to propose that the stores at Adamapully be placed in the charge of a Storekeeper at a salary of Rupees 30.

2. This salary is a low one, but inasmuch as the clerical work devolving upon the occupant of the post will be very trifling, and there will now be little if anything to do beyond seeing to the conduction and safety of the stores, I am of opinion that it is sufficient for the duties to be performed.

3. I would suggest that the sanction be for six months, to be renewed if by the expiration of that period other arrangements have not been made for the disposal of the stores.

4. If you concur in these suggestions, I will thank you to obtain sanction accordingly.

5. As mentioned in my No. 185 of 29th ultimo, the existing sanction will lapse on the 12th instant, but the stores must not be left unprotected and the Storekeeper now in charge (who will probably refuse to accept Rupees 30) must remain until the new arrangement has received sanction and been carried into

effect. There must indeed be a proper transfer of the property from the outgoing to the new Storekeeper.

6. I shall be glad therefore if the disbursement of salary at the present rate of Rupees 60 can be sanctioned for a few days after the 12th instant.

SUBMITTED to Government.

In G. O. No. 1,169, dated 7th May 1872, sanction was accorded to the employment of a Storekeeper on a salary of Rupees 60 for the purpose of taking charge of the stores at Adamapully. This sanction lapsed on the 12th instant, and the Agent in the above letter proposes, as nothing has yet been definitely arranged as to the disposal of the stores, to appoint a Storekeeper on a salary of Rupees 30 for six months in lieu of the present incumbent who is not likely to accept 30 Rupees. The Agent also proposes that the sanction for the present Storekeeper be extended for a few days to enable him to make over the stores to his successor.

2. I beg to recommend the proposals of the Agent for the sanction of Government. The present Storekeeper may be retained till the 31st instant.

3. The charges will have to be debited to Capital, as if the stores are eventually sold the proceeds of the sale will be credited to that head.

(Signed) C. J. SMITH, Captain, R.E.,
For *Acting Chief Engineer for Irrigation.*

No. 108. ORDER THEREON, 7th September 1872, No. 2,134.

IRRIGATION, No. 5.

THE proposals of the Acting Chief Engineer for Irrigation are sanctioned.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No 109. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 12th August 1872, No. 422 :—

WITH reference to G. O. No. 1,657 of the 10th July 1872, I have the honour to submit letters* from the Agents of the Madras, the Great Southern of India, and Carnatic Railways containing their views on the suggestion to allow certain percentages to Station Masters over and above their salaries as an incentive to exert themselves to develope the traffic on the railways.

* Madras Railway, No. 529, 25th July 1872.
Great Southern of India, No. 4,625, 9th August 1872.
Carnatic Railway, 25th July 1872, No. 503.

2. It will be observed that all the Agents disapprove of the proposal, and, in my opinion, they are right. It is probably the case that upon most railways

additional traffic might, by judicious means, be attracted to the rail; but it would not be good policy to employ the Station Masters in touting for it. Several objections to such a course have been pointed out; but the mere fact that any such extra employment would necessarily tend to the neglect of a Station Master's proper duties, and to his frequent absence from the station, is insuperable.

3. There is no such objection to the employment of paid traffic canvassers, to be stationed at the principal towns and villages, on small fixed salaries, supplemented by percentages on any traffic earnings which may be proved to have resulted from their exertions. This was suggested to the Railway Agents in this Presidency, and it will be seen that the proposal is approved of by the Agents of the Great Southern of India and Carnatic Railways. The Agent of the Madras Railways states that "canvassing for traffic forms part of the duty of each Assistant Traffic Manager in his division of the line;" but those officers are Europeans, with very responsible duties, and with large sections of the railway to supervise. They could not possibly canvas effectually for traffic in every large town and village among the Native merchants and others. In my opinion much good would result from the employment of natives as canvassers, paid in the manner suggested.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 25th July 1872, No. 529.

With reference to your letter No. 571 of the 19th instant, with which was enclosed a copy of G. O. No. 1,657 dated the 10th idem, I have the honour to inform you that the views expressed by the Agent of the Sindh, Punjab, and Delhi Railway, in his letter of the 3rd of May to the Government Consulting Engineer for Railways in the Punjab, are quite in accordance with the feelings of the Traffic Manager, and my own opinion, as to the suggestion that Station Masters should be incited to canvas for traffic by the payment of percentages on the excess of traffic earnings above a certain fixed amount.

2. The Traffic Manager writes* as follows upon the subject :—

* No. C453-343, dated 24th July 1872.

"Any attempt to divert the attention of a Station Master from his legitimate duties would be regarded by him as a license to be absent from his station where his presence at all times is absolutely necessary. Good service will be best secured by making all servants sensible that promotion is entirely contingent upon a proper discharge of their duties in all respects."

3. As regards your suggestion that we should employ "paid traffic canvassers on small fixed salaries supplemented by similar percentages," I beg to inform you that canvassing for traffic forms part of the duty of each Assistant Traffic Manager in his division of the line.

From the Agent of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Negapatam, 7th August 1872, No. 4,625.

Your letter No. 284 of the 19th ultimo, the Assistant Traffic Manager considers it would be inexpedient to supplement the pay of Station Masters by allowing percentages on the excess of traffic earnings above certain fixed amounts as an inducement to exert themselves to develope the traffic on the Railway. I entertain a similar opinion, and would elect, in preference, to employ paid traffic canvassers on fixed salaries supplemented by similar percentages. . .

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 25th July 1872, No. 503.

I HAVE the honour to acknowledge the receipt of your letter No. 177, together with G. O. No. 1,657, dated 10th July 1872, requesting the expression of my views as to the expediency of supplementing the pay of Station Masters by allowing percentages on the excess of traffic earnings above a certain fixed amount.

2. In reply, I am of opinion that it would not be expedient to adopt such means to stimulate Station Masters and other subordinate servants of Railway Companies to a proper discharge of their duty.

3. Such measures would, in my judgment, open the door to a neglect of some of the duties of Station Masters, which would involve risks and irregularities which would not be compensated by any increase of earnings likely so to be acquired, and generally I cordially concur in the objections of the Agent of the Sindh, Punjab, and Delhi Railway to the proposals of the Traffic Manager of that Company.

4. I think it quite possible, however, that Native canvassers might, with advantage, be employed, whose duties should be confined to the solicitation for traffic, and to seeing that due attention was paid to the requirements of consigners at stations within a prescribed district, and whose emoluments should be derived almost, if not entirely, from the result of their own exertions; but a percentage payment could only, in my opinion, be based with propriety on an average of a considerable period, say three or even five years.

No. 110. ORDER THEREON, 7th September 1872, No. 2,135.

RAILWAY, No. 17.

ORDERED that these papers be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 111. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 7th September 1872, No. 2,136.

RAILWAY, No. 18.

SIR,—With reference to your letter No. 26-R., dated 19th June 1872, I am directed to forward the accompanying letter No. 422 of the 12th August 1872, from the Consulting Engineer from which it will be observed that the Agents of the Madras Railways are opposed to the suggestion of supplementing the pay of Station Masters by allowing them a percentage on traffic earnings, and their opinion is concurred in by the Consulting Engineer, who proposes the employment of traffic canvassers on fixed salaries to be augmented by percentages on any increase of traffic which may be directly due to their exertions.

2. The details of the proposed measure are not fully described; but I am directed to state that His Excellency the Governor in Council considers that this arrangement would be one of very questionable utility. The Consulting Engineer has been called on to specify the duties of the proposed "canvassers" and to give details as to their probable number and rate of remuneration.

No. 112. Read the following Proceedings of the Government of India, Public Works Department, (Railway,) dated Simla, 14th August 1872, Nos. 1,158–75 S—R:—

Dehli District, Rajpootana State Railway.—Extension of the Dehli Rewari line to a Junction with the line from Agra to Sambar.

READ again—

To the Government of India in the Foreign Department, No. 454 R, of 14th March 1870.

To the Government of the North-Western Provinces, No. 580 R, of 30th March 1871.

From Superintending Engineer, Dehli District, Rajpootana (State) Railway, No. 77, dated 19th January 1872, suggesting that no work should be commenced for a Junction Station on the Agra-Sambar line until the alternative estimate for a line from Rewari to the Agra-Sambar line had been considered.

Proceedings of the Government of India in the Public Works Department, Nos. 46-51, of January 1872, regarding the point of junction of the Dehli District with the Agra-Sambar line.

Proceedings of the Government of India in the Public Works Department, Nos. 64-74, of January 1872, on the subject of the alternative lines between Rewari and Jaipur, and between Rewari and the Agra-Sambar line, and on the alignment south and west of Jaipur.

Proceedings of the Government of India in the Public Works Department, Nos. 70-74, of February 1872, containing the estimate for the line from Dehli to Rewari and, the orders of Government thereon.

READ also—

From the Superintending Engineer, Dehli District, Rajpootana (State) Railway, No. 216 W, of the 12th June 1872, submitting estimates for the extension of the Dehli-Rewari line to a junction with the line from Agra to Sambar.

OBSERVATIONS.—The Governor-General in Council has again considered the expediency of at once proceeding with the extension southward of the metre gauge railway which has been constructed from Dehli to Rewari. The several alternatives which have from time to time been presented are as follow:—

1st.—A complete suspension of railway work in this link of the Rajpootana State lines.

2nd.—The construction of a railway, direct from Rewari to Sambar, which would form an important section of a direct railway which may in future years connect Bombay with the North-West Provinces of India.

3rd.—The construction of a railway somewhat in this direction passing from Rewari to the west of the Ulwar Hills, but proceeding *via* Kot Putti and striking the railway which is being made from Agra to Sambar at Jaipur. This line would be more circuitous, but less costly than the direct line from Rewari to Sambar.

4th.—The fourth alternative is to adhere to the general route which has been hitherto contemplated by the Secretary of State and the Government of India, and to continue the railway from Rewari southwards, through Ulwar, in order to form a junction with the Agra-Sambar line at the least expense, somewhere near Bewai or Bandikuri.

2. If a comparison between the lengths of the several proposed railways is made, it appears that the new part of a direct line from Rewari to Sambar would be at least 52 miles longer than a railway from Rewari to Bandikuri or Bewai, and that the less direct railway from Rewari, through Kot Putti to Jaipur, would.

be 25 miles longer than the line to a junction at Bewai. These three routes from Rewari to Sambar and Jaipur have been examined, and it is seen that the two which involve most new construction will not pass through any better country than the route through Ulwar, either as regards fertility, commerce, or from an engineering point of view; on the contrary, in these respects, they are rather less favourable and they are opposed by the majority of the Political Officers who are acquainted with Rajpootana. Their solitary peculiar recommendation is that either would reduce the through distance between Dehli and the Central Provinces, or between Dehli and Bombay, and would also shorten the transit of Sambar salt. The Government of India, therefore, had to weigh the advantages to be gained by direct communication between Dehli and Sambar, Jaipur, and eventually, perhaps, Bombay, on the one hand, and, on the other, economy in first cost and working, and the probability of an important local traffic. The Government of India having duly considered the subject, adhere to their former opinion that railways in Rajpootana should be formed for the sake of the neighbourhood through which they pass, rather than to cheapen the freight charged on the through traffic. His Excellency in Council, therefore, decides that the short railway from Rewari to Bandikuri should be constructed before either of the longer lines which would traverse the country west of the Ulwar Hills.

3. The careful alternative estimates of the cost of a railway from Rewari to effect a junction with the Agra-Sambar line, now in course of construction, which were prepared by Mr. Furnivall, have been revised, and altered by Major Stanton, R.E., assisted by an efficient staff. Major Stanton estimates that the line will be 83½ miles in length, and will cost Rupees 29,98,532 without stock, if Bandikuri be chosen as the junction, and will be 78¾ miles long, and will cost Rupees 28,13,895, if the junction be made at Bewai. The Consulting Engineer to the Government of India for State Railways, after examining the estimates and plans, and after conferring with Major Stanton, has thought it necessary to make some additions, especially on account of the late increase in the value of iron-work, and believes that, including rolling-stock, the line may be built for 40 lakhs or about Rupees 47,000 per mile. The Government of India hope that this low estimate may not be exceeded; and, making full allowances for unforeseen contingencies, they see no reason why the line from Rewari to Bandikuri should cost more mile for mile, than the railway from Dehli to Rewari which is on the point of completion, and is now estimated to cost, when stocked, Rupees 55,000 per mile.

4. Considering the financial prospects of the Rajpootana Railways generally, and the reports as to the extent of the local trade of Ulwar, the Governor-General in Council believes that the receipts from local and through trade together will nearly cover the cost of working expenses and interest, if the new length of railway does not cost more than Rupees 55,000 per mile; and, taking also into account the important manner in which railways in Native States subserve the British interests politically and fiscally, His Excellency in Council believes that the financial prospects of this line are sufficiently good to justify its sanction by the Government of India.

5. When the project for the railway from Agra to Sambar was before them, the Government of India, looking principally to the first cost of the line from Rewari southwards, came to the opinion that it should take the shortest and cheapest route, which would bring the junction to Bewai. The Political Officers

and Major Stanton show, however, that the towns of Rajgarh and Baswa have a larger population and greater trade than was before supposed; and, as they believe that the additional expenditure required to carry the railway through these towns will be remunerative, they recommend the neighbourhood of Bandikuri as the junction. This alteration, and a deviation in order to obtain a better crossing of the River Sabi, are the two important changes from the route which was formerly surveyed, and the Government of India accept them as marked improvements.

6. The Governor-General in Council is, therefore, of opinion that the Superintending Engineer's estimate, as modified by the Consulting Engineer to the Government of India for State Railways, should be sanctioned, and that the Superintending Engineer should be ordered to align the railway from Rewari *via* the Bhowal crossing of the Sabi River through Khartal, Ulwar, Rajgarh, and Baswa, to the neighbourhood of Bandikuri, the exact position of the junction between the two railways being left for settlement after the two Superintending Engineers have conferred on the subject. The construction of the rest of the work may be proceeded with departmentally by Major Stanton.

7. In conclusion, the Governor-General in Council has pleasure in acknowledging the care and ability with which the plans, sections, drawings, and estimates for this extension have been prepared. The neat execution of the drawings and the completeness of the submission generally, are also highly creditable, and the Governor-General in Council desires that the thanks of the Government of India may be rendered to Major Stanton and his staff.

Extract from a memorandum by the Consulting Engineer to the Government of India for State Railways, dated the 18th July 1872, on the estimates for the extension of the Dehli-Rewari line to a junction with the Agra-Sumbar line.

3. The details of construction appear to have been carefully considered, and well worked out; but there are a few minor points to which the attention of the Engineer may be directed.

The masonry in the walls and abutments is, as a general rule, rather too light, and I recommend an increase in their thickness. Footings should in all cases be added in front of wing walls and abutments.

When high return walls are used, it will be desirable to arch them over and close the ends so as to exclude the earth which has a tendency to expand and force them out, and when they are not sufficiently high to render this precaution necessary, the space between the walls should be filled in with hard material of a non-expansion character. When the foundation is good, I prefer splayed wings as being cheaper and more simple, but this is rather a local question to be decided by the Engineer on the spot according to the special circumstances of each case. The junction of the return walls with the abutment is in most cases rather weak; this may be remedied by keeping the outside face of the masonry plumb, and giving the increase of thickness on the inner side. The toe of the slope is in some cases rather too near the stream in some of the drawings. I prefer pointed to rounded cut-waters, and I recommend cut-waters to the down-stream side of the piers, as well as to the up-stream side. The depth of the curtain walls appears to me to be small in some cases, but this is a question depending upon the local character of the foundations in each case, and must be decided by the Engineer on the spot.

The pathway of the girder bridges between the rails should be of corrugated iron instead of planking, which is likely to take fire, and on any long viaduct such as the Sabi Bridge provision should be made about every 150 yards for taking off a trolly; this may be done by an additional light girder at such intervals, the piers being slightly lengthened out on one side to support it.

When there is likely to be a rush of water, the earth for forming the embankment should be taken from the down-stream side only, in the neighbourhood of the bridge, so that there may be

no side cuttings to be breached on the up-stream side by the water that may run in the direction of the line; with the light embankments of the Ulwar extension there will be no difficulty in providing the earth from one side only.

With regard to Major Stanton's remarks on the necessity for increasing the size of the sleepers, it does not appear to me that there is any proof that the excessive splitting noticed on sleepers of smaller dimension is due to their small size. I am rather disposed to attribute it to the fact that the sleepers of smaller dimensions have been sent down from the hills without allowing so long a period as that which has been allowed to the sleepers of larger dimension before they were sent down to the hot plains; but it is desirable that the thickness should be increased to 4½ inches, as the shoes are now very expensive, and it will be better to order no more until a trial has been made with those already ordered.

Major Stanton has estimated for rails of 36lbs. section; but, as the weight of 40lbs per yard has been adopted as the standard, provision should be made for that weight in the estimate.

Those level-crossing gates which close across the rail should be provided with circular signal boards, painted red, so as to be distinctly visible to the driver by day. They should also be provided with lamp sockets and gate lamps, which should be placed near the heel-post to prevent the jar of the gate as it closes from breaking the lamp or spilting, the oil-stops should also be provided to all gates, but they should be near the heel-post and not in the centre of the road. The bars for level crossing should be moved further from the railway, so that they cannot lie on the rail when open.

The level-crossing guard rails require to be bent further out at their ends.

The engine-shed requires a small lock-up office, and where this can be combined with the tank (as shown in one of the designs), it will be better.

The roof principals of the engine-shed should rest upon bed stones.

In the tank the overhanging cornice might be replaced by a plain plinth; and footings should be added to the inside of the walls.

The height of the platforms requires to be reduced to the type, namely, 0·30 metre in passenger, and 0·60 metre in goods platforms. Major Stanton has explained to me that he has available a large stock of small barrack girders which he can use at a low cost; otherwise, I should have suggested an increase in the spans of some of the viaducts and bridges of more than one span.

In other cases, when girders have been adopted, it may be well, considering the present difficulties of the iron trade, to suggest to Major Stanton the desirability of substituting stone arches for girders, when it can be done without increased expense. The rate for iron girder work by the last advices was £22 per ton delivered in England. The stations proposed are as follow:—

Name.	Distance in Miles.	
	From Rewari.	Apart.
Bhowal	9½	9½
Ajaraka	17½	8
Khartal	29	11½
Basi	37½	8½
*Ulwar**	46	8½
Malakhari	58	12
*Rajghar**...	68	10
*Baswa**	76	8
Bandikuri Junction	83½	7½

These stations appear to be necessary, though Basi is somewhat close to Ulwar and Khartal, but the length of seventeen miles betwn Ulwar and Khartal is too long to be without an intermediate station.

* The stations marked with an asterisk will be second-class stations, the remainder will be third-class stations, with the exception of Bandikuri Junction, which will be an engine station.

The goods sidings in some of the stations are on the same side with the passengers sidings. I prefer, as a rule, the type plan of keeping the goods station on the other side, but in some instances it is necessary to deviate from that practice; in one station a deviation is manifestly necessary, but in the others I would suggest an adherence to the type, unless there is some local reason for departure from it, but this is a question that may be left to Major Stanton's discretion, merely directing his attention to the suggestion.

4. The rates adopted by Major Stanton appear to be sufficient, and the experience which he has gained of the cost of work in the neighbourhood places him in a position to form an accurate judgment respecting the probable rates at which work can be executed on the extension. The criticisms which I have made above are minor questions, none of which will affect the estimate to any appreciable degree, with the exception of the additions to the strength of masonry and the weight of rails. Some addition also will be necessary in consequence of the late increase in the price of rails.

The cost of the line, with these additions, will stand as follows :—

	Total, Rupees.	Per mile, Rupees.
Original estimate	29,98,532	35,910
Additional weight of rails.	1,04,375	1,250
Addition to cost of rails	1,04,375	1,250
Increase to masonry	41,750	500
Total for construction	32,49,032	38,910
Rolling Stock	6,68,000	8,000
Total stocked	39,17,032	46,910

ORDER.—Ordered that a copy of this Resolution, with copy of the 3rd and 4th paragraphs of memorandum by the Consulting Engineer to the Government of India for State Railways, be communicated to the Local Governments noted in the margin.

Madras, Bombay, Bengal, North-Western Provinces, Punjab, Oudh, Central Provinces, Central India, Rajpootana, Hyderabad, Mysore, and British Burmah.

Also that similar copies be forwarded to the Government of India in the Foreign Department, in order that necessary arrangements may be made for the acquisition of land which will be required in parts of the Nabha, Ulwar, and Jaipur territories.

Also to Financial Department and the Department of Agricultural, Revenue, and Commerce, and the Accountant-General, Public Works Department, for information.

Also that copies be forwarded, for information and guidance, to the Superintending Engineers of the Dehli District, and the Agra District, Rajpootana (State) Railway, and that they be published in the *Supplement to the Gazette of India.*

(Signed) H. DRUMMOND, Colonel, E.E.,
Offg. Deputy Secretary.

No. 113. ORDER THEREON, 9th September 1872, No. 2,137.

RAILWAY, No. 19.

COMMUNICATED to the Consulting Engineer and to the Examiner of Railway Accounts for information.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 114. Read the following paper from the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 27th August 1872, No. 1,167 :—

BUILDINGS AND ROADS.

MONTHLY Appropriation Return for June 1872, showing the state of the grants at the end of the month as per Budget Register.

Part I.—Grants for Main Heads of Service.

Heads.	Amount at credit at the beginning of the month.	Additions made during the month.	Total.	Reductions made during the month.	Amount at credit at the end of the month.
IMPERIAL.					
ORDINARY.	RS.	RS.	RS.	RS.	RS.
Original Works.					
Military	1,80,000	70,000	2,50,000	......	2,50,000
Do. Revenue (undistributed)	1,00,000	......	1,00,000	1,00,000	......
Civil Buildings	64,873	......	64,873	......	64,873
Total, Original Works...	3,44,873	70,000	4,14,873	1,00,000	3,14,873
Repairs	2,25,127	30,000	2,55,127	......	2,55,127
Establishment	1,68,000	......	1,68,000	......	1,68,000
Tools and Plant ...	12,000	......	12,000	......	12,000
Total, Ordinary Public Works Imperial...	7,50,000	1,00,000	8,50,000	1,00,000	7,50,000
PROVINCIAL.					
Original Works.					
Civil Buildings	7,15,635	......	7,15,635	3,618	7,12,017
Communications ...	17,756	......	17,756	......	17,756
Miscellaneous Public Improvements	22,070	3,303	25,373	......	25,373
Total, Original Works...	7,55,461	3,303	7,58,764	3,618	7,55,146
Repairs	1,66,945	315	1,67,260	......	1,67,260
Establishment	......	......	......	......	......
Tools and Plant ...	25,000	......	25,000	......	25,000
Total Grants, Provincial.	9,47,406	3,618	9,51,024	3,618	9,47,406

Detail of Additions and Reductions of Main Heads during the month.

IMPERIAL.

Additions.

		RS.	RS.
Amount transferred from 1 lakh additional grant for Military Works to Repairs, Military	*Vide* G. O. No. 1,577, dated 28th June 1872.	30,000	
Do. do. from do. do. for do. to Original Works Military		70,000	
			1,00,000

Reductions.

As above 1,00,000

PROVINCIAL.

Additions.

	RS.
Amount transferred from Original Works Civil Buildings to Miscellaneous Public Improvement, New—*Vide* G. O. No. 1,429, dated 8th June 1872	3,303
Do. from do. do. to Repairs Civil Buildings do. 1,398, dated 6th do.	315
	3,618

Reductions.

As above	3,618

Part II.—Appropriations against Minor Works Grant.

Heads.	Amount of grant unappropriated at the beginning of the month.	Additions and reductions by transfers.			Balance as modified.	Appropriations.			Balance of grant unappropriated at the end of the month.
		Additions during the month.	Total.	Reductions during the month.		Minor Works.	Major Works.	Total.	
Imperial.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Military	29,662	......	29,662	......	29,662	7,536	11,462	18,998	10,664
Do. Reserve ...	1,00,000	......	1,00,000	30,000	70,000	1,610	68,390	70,000	......
Civil Buildings ...	10,328	......	10,328	......	10,328	6,042	......	6,042	4,286
Total, Imperial...	1,39,990	......	1,39,990	30,000	1,09,990	15,188	79,852	95,040	14,950
Provincial.									
Civil Buildings ...	51,918	3,000	54,918	3,618	51,300	12,318	27,439	39,757	11,543
Miscellaneous Public Improvement ...	500	3,303	3,803	......	3,803	2,860	443	3,303	500
Total, Provincial...	52,418	6,303	58,721	3,618	55,103	15,178	27,882	43,060	12,043

Abstract of Part II.

	Appropriations.			
	Imperial.		Provincial.	
	Minor Works.	Major Works.	Minor Works.	Major Works.
	RS.	RS.	RS.	RS.
April 1872	3,222	...	2,996	17,850
May ,, ...	4,525	4,636	2,525	16,206
June ,, ...	15,188	79,852	15,178	27,882
	22,935	84,488	20,699	61,938
	84,488	...	61,938	...
	1,07,423	...	82,637	...
Total Grants ...	1,22,373	...	94,680	...
Unappropriated Balance, 30th June 1872 ...	14,950	...	12,043	...

Part III.—Appropriations against Grant for Repairs.

Heads.	Amount of grant unappropriated at the beginning of the month.	Additions and reductions by transfers.			Balance as modified.	Appropriations during the month.	Balance of grant unappropriated at the end of the month.
		Additions during the month.	Total.	Reductions during the month.			
	RS.	RS.	RS.	RS.	RS	RS.	RS.
Imperial.							
Military	84,980	30,000	1,14,980	......	1,14,980	10,714	1,04,266
Civil Buildings ...	4,374	......	4,374	......	4,374	65	4,309
Total, Imperial...	89,354	30,000	1,19,354	......	1,19,354	10,779	1,08,575
Provincial.							
Civil Buildings ...	73,850	315	74,165	......	74,165	10,424	63,741
Communications ...	1,440	......	1,440	......	1,440	214	1,226
Miscellaneous Public Improvement ...	15,275	......	15,275	......	15,275	25	15,250
Total, Provincial...	90,565	315	90,880	......	90,880	10,663	80,217
Tools and Plant, Imperial, Ordinary ...	8,948	......	8,948	......	8,948	......	8,948
Do. Provincial ...	20,221	......	20,221	......	20,221	187	20,034

Abstract of Part III.

—	Appropriations.	
	Imperial.	Provincial.
	RS.	RS.
April 1872	88,125	40,098
May ,, ...	47,648	36,282
June ,, ...	10,779	10,663
	1,46,552	87,043
Total Grants...	2,55,127	1,67,260
Unappropriated Balance, 1st July 1872 ..	1,08,575	80,217

Statement of Unauthorized Appropriations made during the month of June 1872.

Nil.

No. 115. ORDER THEREON, 9th September 1872, No. 2,138.

ACCOUNT, No. 15.

COMMUNICATED to the Accountant-General of the Public Works Department.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 116. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Pollachy, 26th August 1872, No. 119:—

I HAVE the honour to request the sanction of Government for a transfer of Rupees 250 from the South Canara District under Repairs Military to the same

head in the Neilgherry District to enable me to allot funds for the emergent work of cleaning and relaying water-pipes from reservoir in rear of No. 5 Barracks to end of No. 4 block of married quarters at Wellington, carried out at the request of the Commandant at Wellington.

No. 117. ORDER THEREON, 9th September 1872, No. 2,139.

ACCOUNT, No. 16.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 174.

No. 118. *Note by the Acting Chief Engineer for Irrigation.*

1 Letter of Major Beckley.
1 Supplemental Estimate, Rupees 6,292.

IN G. O. No. 1,618, dated 4th July, an establishment, costing Rupees 1,573 per mensem, was sanctioned for four months for the completion of the investigations connected with the Rooshkoolia Project; the work is still incomplete, and the establishment will be required for a further period of four months. A further sanction of Rupees 6,292 is solicited.

OOTACAMUND,
29th August 1872.

(Signed) R. F. OAKES, Major, R.E.,
Acting Chief Engineer for Irrigation.

From Major T. BECKLEY, R.E., Executive Engineer on special duty, Ganjam, to the Chief Engineer for Irrigation, dated Chetterpore, 16th August 1872, No. 138.

I HAVE the honour to forward a supplemental estimate of probable expenditure in connection with Rooshkoolia Project and other irrigation works in Ganjam.

2. The Rooshkoolia Project will be despatched this day by steamer to Madras, and you will, after looking over the plans, be able to judge how much more work is necessary. I have at any rate to get levels and survey along the line of Itchapore irrigation channel, and shall send you shortly plans and probable estimate of Boradapilly and Godahallow Reservoirs.

3. When all papers connected with Rooshkoolia Project are despatched, I propose advancing the Mullada Tumpara Project.

No. 119. ORDER THEREON, 9th September 1872, No. 2,140.

IRRIGATION, No. 6.

BEFORE sanctioning any further expenditure on surveys of Irrigation Projects under Major Beckley in Ganjam

and Vizagapatam, His Excellency the Governor in Council desires to be furnished without further delay with the information called for in paragraph 1 of G. O. No. 254 of 25th April. Major Beckley should not have delayed reporting the necessity of an extension of time and additional funds till a fortnight after the expiry of the first sanction. He will explain the cause of the delay.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 120. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 21st August 1872, No. 1,351 G. R. :—

In acknowledging the receipt of your letter No. 1,730, dated 20th July 1872, on the subject of a temporary telegraph to be used during the construction of the Great Southern of India Railway Extensions to Tuticorin and Tinnevelly, I am directed to refer you to my telegram of this day's date, and to enclose a copy of letter No. 182, dated 13th August 1872, from the Officiating Director-General of Telegraphs, which should be communicated to the Agent, Great Southern of India Railway Company.

2. The Governor-General in Council sanctions the expenditure of Rupees 12,000 for the provision of a line of telegraph on temporary posts for the Southern Extensions; but the Agent will distinctly understand that this permission to make use of the English materials which are in hand in no way affects the decision regarding the construction of the permanent telegraph, which was communicated in Public Works Department No. 968 G. R., dated 1st July 1872.

3. This sanction has been registered as No. 19 M. R. of 1872-73.

From the Officiating Director-General of Telegraphs in India, to the Secretary to the Government of India, Public Works Department, dated Simla, 13th August 1872, No. 182.

In reply to your No. 1,248 G. R., dated the 6th instant, I have the honour to state that I consider the construction of the permanent telegraph lines along the Great Southern of India Railway extension from Trichinopoly to Tuticorin for the joint use of the Railway, and this department should be postponed to a later period, and that if a telegraph line is now necessary for the construction of the railway or for the convenience of the engineering staff it should be erected by the Railway Engineers in a temporary manner as proposed by the Agent. I have, however, to observe that the proposed extension has only very lately been lockspitted.

2. The construction of the permanent telegraph line for the joint use of the Railway and this department I am of opinion should not be carried out till the stations and station sidings have been marked out, the cuttings and embankments completed, and the material for it can be distributed by waggons at the same time that the material for the permanent way is being sent forward. If this course is adopted, it will always be practicable to have the telegraph erected a mile or two a head of the permanent-way.

3. In according sanction to the construction of the temporary line of telegraph, it is desirable that it should only be so on the distinct understanding that the permanent telegraph for the

railway is to be constructed and maintained by the Government Telegraph Department, and the wire now to be used for the temporary line will be transferred from it to the permanent one when the latter is ready to receive it.

No. 121. ORDER THEREON, 9th September 1872, No. 2,141.

RAILWAY, No. 20.

COMMUNICATED to the Consulting Engineer for Railways, with reference to Proceedings No. 234, dated 24th August.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 122. Read the following Proceedings of the Government of India, Public Works Department, Irrigation, dated Simla, 1st August 1872, No. 648 :—

READ the following :—

Moota Valley Irrigation Project.

Extract from a Despatch from the Secretary of State for India, No. 63, dated 27th June 1872.

"PARAGRAPH 8.—* * * Recent experience, with regard both to this and to other large irrigation schemes in various parts of India, shows plainly that the importance of the utmost care in the preparation of estimates for irrigation works is far from being justly appreciated by many officers of the Public Works Department. According to present arrangements, all such works, when of any magnitude, are to be paid for out of borrowed money, but their cost is permitted to be so charged only on the understanding that it will, within a moderate period, be reimbursed out of earnings ; and very serious financial embarrassment cannot fail to be frequently the result, if much more care than hitherto be not taken in collecting and examining data for the estimates on which such understanding must be based. And this additional care is required even more in respect to estimates of revenue than to those of expenditure. It is disheartening enough to find a work, which had been begun in the belief that its cost would be only 30 lakhs, costing more nearly 50 lakhs by the time it is finished ; but still more disappointing will it be to see the work, when completed, remaining for years unremunerative, because the cultivators, for whose benefit it has been designed, required to be gradually habituated, and as it were coaxed, to avail themselves of the water which they had been previously represented as most eager to use and and quite willing to pay for."

ORDER.—Ordered that the foregoing be communicated to the several Local Governments and Administrations for information, with a request that particular care may be enjoined on Irrigation Officers in the preparation of all estimates for irrigation works in future.

(Signed) F. H. RUNDALL, Colonel, R.E.,
Offg. Depy. Secy. to the Govt. of India.

No. 123. ORDER THEREON, 9th September 1872, No. 2,142.

IRRIGATION, No. 7.

COMMUNICATED for the information and guidance of Superintending Engineers and Executive Officers.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 124. Read the following letter from the Assistant Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, (Railway,) dated Simla, 23rd August 1872, No. 1,364-G.R. :—

IN acknowledging the receipt of your letter No. 1,841, dated the 5th August 1871, submitting a statement of sanctions and expenditure on establishments and on Revenue Account of the Great Southern of India Railway for the half-year ended the 31st December 1871, I am directed to invite your attention to Public Works Department No. 823-G.R. of the 23rd June 1872, and to request that the form of comparison between sanctions and actual expenditure therein referred to may be adopted in future half-years.

No. 125. ORDER THEREON, 9th September 1872, No. 2,143.

RAILWAY, No. 21.

COMMUNICATED to the Examiner of Railway Accounts for future guidance. The form referred to will be found printed with G. O. No. 1,999, dated 22nd August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 126. Read the following letter from the Acting Inspector-General of Police, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 3,095 :—

WITH reference to paragraph 2 of G. O. No. 2,007, dated 23rd instant, I have the honour to report, for the information of Government, that the sum of Rupees 18 referred to *was* spent *before* and *not after* the close of the past official year, as supposed by Government, under the following circumstances leading to the necessity for a re-allotment of funds.

2. The sum of Rupees 18, which was originally provided by a transfer* to the Vizagapatam District for expenditure on the temporary shed at Burjavalsa during 1871-72, should have been drawn

* *Vide* G. O. No. 597, dated 5th March 1872, Public Works Department.

from the Superintending Engineer and spent on the work in question. But a similar amount was by an oversight obtained from the Treasury Deputy Collector and expended on the work before the close of the official year. It is not known on what authority the latter officer paid the money to the Superintendent *direct*, nor does the mistake appear to have been discovered until June last, when the Superintendent of Police, Vizagapatam, requested the instructions of this office regarding the adjustment of this irregularly drawn sum as far as the Treasury Deputy Collector's accounts with him were concerned. To meet the above difficulty the present sanctioned allotment (Rupees 18) was solicited as the amount which should have been drawn from the Superintending Engineer has lapsed.

No. 127. ORDER THEREON, 9th September 1872, No. 2,144.

CIVIL WORKS, No. 10.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 128. Read the following docket from the Government of India, Public Works Department, (Establishment—General,) dated Simla, 22nd August 1872, No. 1,028-E. G.:—

COPY of the following forwarded to the Government of Madras in the Public Works Department, with reference to its No. 1,106, dated 30th April last, and in continuation of telegram of 19th current.

(By Order.)

(Signed) A. B. SAMPSON,
Under Secy. to the Govt. of India.

No. 1,997.

GOVERNMENT OF INDIA,

FINANCIAL DEPARTMENT,

Simla, 15th August 1872.

READ a communication from the Public Works Department No. 940-E. G., dated 29th July 1872, recommending a proposal of the Government of Madras for the grading of Overseers of the Public Works Department in that Presidency in three grades on salaries of Rupees 60, 80, and 100 per mensem, involving an increased expenditure of Rupees 2,600 per mensem.

RESOLUTION.—Sanctioned on the condition that the increased charge will be met from savings in the Budget for the current year under the head "Establishment."

ORDER.—Ordered that the foregoing Resolution be communicated to the Public Works Department and that the original papers of that department be returned.

(Signed) D. BARBOUR,
Offg. Under Secy. to the Govt. of India.

No. 940-E. G.

GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT,

Establishment—General,

Simla, 29th July 1872.

Reorganization of the Public Works Department, Madras.

Read again :—

Letter No. 2,319 of the 12th September 1871, from the Government of Madras and enclosures, Public Works Department, Resolution No. 635-E. G. of the 8th May 1872, to ditto.

Do. do. No. 636-E. G. of 8th May 1872, to Financial Department.

Read also :—

Letter No. 1,105 of the 30th April 1872, from the Government of Madras.

RESOLUTION.—In Public Works Department Resolution No. 635-E. G., dated 8th May 1872, the main features of the reorganization of the Public Works Establishments in Madras were approved, and it was said in regard to the subordinate establishments that there was no objection to the proposals except that the established grades should be maintained. The Madras Government now recommends the immediate introduction of that portion of the scheme which relates to the grading of Overseers in three grades on Rupees 60, 80 and 100, on the understanding that the increased charge which the measure will involve will be met from expected savings in the Budget provision for the current year under the head "Establishment." Under the rules of the Public Works Code of the Government of India, there is no restriction as to the number in each grade of Overseer, and the number of Overseers out of the total number of upper subordinates proposed for Madras would under those rules be 156, while the number in the present proposition is 187.

2. The Madras Government proposes to place so many in each grade only. In both the above respects therefore the proposal of the Madras Government is within what is allowed by the Code Rules. There appears, therefore, in this department no objection to the immediate introduction of this part of the scheme on the condition above named.

ORDER.—Ordered that this Resolution and the papers now read be forwarded to the Financial Department for further consideration.

(Signed) A. B. SAMPSON,
Under Secy. to the Govt. of India.

No. 129. ORDER THEREON, 9th September 1872, No. 2,145.

ESTABLISHMENT, No. 7.

COMMUNICATED to the Controller of Public Works Accounts, who will arrange for the adjustment of the excess in the manner indicated.

2. The grading of the Overseers has been authorized in separate Proceedings.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 130. Read the following Endorsement of the Acting Deputy Consulting Engineer for Railways, dated Madras, 21st August 1872, No. 436 :—

MADRAS RAILWAY.

SECOND DIVISION, NORTH-WEST LINE.

Statement of Cattle run over by Trains on 1st June 1872.

Date.—1st June 1872. *Mileage.*—Miles 187, telegraph post 3. *Number and description of Cattle.*—One Ass. *By which Train.*—9-15 A. M. train from Bellary. *Description and state of fence.*—Aloe and four strand wire fence, in good order. *Remarks.*—Inquiry for owner is being made.

(Signed) C. O. BURGE,
Resident Engineer.
(„) W. R. ROBINSON,
For *Chief Engineer.*

To the Consulting Engineer for Railways for information.

(True Copy.)

4th June 1872. (Signed) R. B. ELWIN,
Agent and Manager.

FIRST DIVISION, SOUTH-WEST LINE.

Statement of Cattle run over by Trains on 28th June 1872.

Date.—28th June 1872. *Mileage.*—Miles 40, telegraph post 13. *Number and description of Cattle.*—One Cow. *By which Train.*—7-30 P. M. *Description and state of fence.*—Aloes. In good order, but rather low. *Remarks.*—Steps being taken to ascertain owner and prosecute.

(Signed) F. M. PFEIL,
Resident Engineer.
(„) B. ANDERSON,
Chief Engineer.

To the Consulting Engineer for Railways for information.

(True Copy.)

29th June 1872. (Signed) J. W. MELLIS,.
For *Agent and Manager.*

FIRST DIVISION, SOUTH-WEST LINE.

Statement of Cattle run over by Trains on 10th July 1872.

Date.—10th July 1872. *Mileage.*—Miles 5, telegraph post 3. *Number and description of Cattle.*—One Goat. *By which Train.*—4 P. M. from Raichore of 9th July. *Description and state of fence.*—Korocapoly, fence good. *Remarks.*—Reported to the Police. Owner not known.

11*th July* 1872.

(Signed) F. M. PFEIL,
Resident Engineer.

(„) F. B. HANNA,
For *Chief Engineer.*

To the Consulting Engineer for Railways for information.

(True Copy)

13*th July* 1872.

(Signed) J. W. MELLIS,
For *Agent and Manager.*

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 15th August 1872, No. 580.

WITH reference to your letter, No. 611, of the 2nd instant, I have the honour to enclose you a copy of the Chief Engineer's letter, No. 374, of the 12th instant, which contains the information you asked for with regard to the statements of cattle run over by trains noted in the margin of your letter.

2. Mr. Anderson points out that the passive opposition of the villagers and village authorities is a great hindrance to the servants of the Company in their endeavours to trace the owners of cattle found straying upon the line.

3. In forwarding my letter and its enclosure, I request that you will be kind enough to move the Government to take some action, in view to the authorities of villages in the vicinity of the Railway being made to understand how important it is in the interests of the public that they should render to the Company all the assistance in their power in cases of this nature.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 12th August 1872, No. 374.

Consulting Engineer's letter, No. 611, *dated 2nd instant.*

THE owner of the cow run over by the 7-30 P. M. train on 28th June last at 40 miles, 13th telegraph post, South-West Line, has been prosecuted and fined Rupees 10; but I regret to say that our efforts to find the owners of the ass run over at 187 miles, 3rd telegraph post, North-West Line, on 1st June, and of the goat run over at 5 miles, 3rd telegraph post, South-West Line, on 10th July, have proved unavailing. On reference to my letter, No. 346, dated 19th ultimo, you will see that in only two out of the six cases of cattle-trespass there noticed were we able to discover the owners of the animals.

2. The passive opposition of the villagers and village authorities to all efforts on the part of railway employés to obtain convictions in cases of cattle-trespass makes it extremely difficult for us to prove the ownership of animals, as the villagers in nearly every instance profess ignorance, although any person who knows the habits and customs of the inhabitants of small up-country villages must be morally convinced that in most cases this plea of ignorance is put forward to shield the offender, and is not substantially true. I feel convinced that if the village authorities could be induced to assist us in our efforts to find the owners in cases of cattle-trespass, instead of tacitly opposing us, as at present, that double the number of convictions would be obtained, and I should feel much obliged if you would solicit Government to aid us in the matter.

SUBMITTED for the information of Government.

(Signed) R. THOMPSON, Captain, R.E.,
Acting Deputy Consulting Engineer for Railways.

No. 131. ORDER THEREON, 9th September 1872, No. 2,146.

RAILWAY, No. 22.

HIS Excellency the Governor in Council desires that the Magistrates of the various Districts through which the line of railway passes will use their best endeavours to secure the aid of the heads of villages in discovering the owners of cattle trespassing on the line.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 132. Read the following docket from the Government of India, Public Works Department, (Account—Railway,) dated Simla, 24th August 1872, No. 1,123-A.R. :—

COPY of the following Resolution forwarded to the Secretary to the Government of Madras, Public Works Department, Railway Branch, for information, and in continuation of Public Works Department Nos. 941-53 G.R. of the 28th June 1872.

(By Order.)

(Signed) P. O'CONNELL, Lieut.-Colonel, R.E.,
Offg. Deputy Secy. to the Govt. of India.

No. 1,665.

GOVERNMENT OF INDIA,

FINANCIAL DEPARTMENT,

Simla, 31st July 1872.

READ a communication from the Accountant-General, Public Works Department, No. 672-R., dated 17th July 1872, forwarding copy of a circular issued by that department, in which it is arranged that, when stores or materials are purchased by Government from the Railway Companies, or by the Railway Companies from Government, payment shall be made within two months of the presentation of the bill, after which time, if the sum be not paid, interest at 5 per cent. will be charged on the amount of the purchase money.

The Governor-General in Council in this department is pleased to direct that whenever Government is called upon to pay interest under this arrangement, a full explanation of the circumstances shall be furnished to the Government in the Financial Department.

ORDER.—Ordered that a copy of the foregoing be communicated to the Public Works Department.

(Signed) R. B. CHAPMAN,
Secy. to the Govt. of India.

No. 133. ORDER THEREON, 10th September 1872, No. 2,147.

RAILWAY, No. 23.

COMMUNICATED to the Consulting Engineer for Railways in continuation of G. O. No 1,728, dated 19th July 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 134. From the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 31st July 1872, No. 397.

IN the Proceedings of Government noted in the margin it was ordered that pending further examination into the condition of the bridge on the Madras Railway across the Palar, the Poiney, and the Goriattum rivers, certain precautions should be observed with respect to inspection and signalling before a train was allowed to pass over any one of the three bridges in question.

28th August 1871, No. 2,197.
9th October ,, ,, 2,566.

2. In their Order dated the 28th June 1872, No. 1,568, the Government stated that, upon a full consideration of the circumstances, they had come to the conclusion that the bridge over the Goriattum river may be reckoned sufficiently safe for the future.

3. I have now the honour to submit a letter* from the Agent of the Madras Railway giving cover to one from the Chief Engineer, in which, with reference to the last quoted order of Government, authority is asked to cancel so much of the previous orders as has reference to the bridge over the Goriattum river.

* No. 517, dated 20th July 1872.

4. In forwarding this letter I beg to append a copy of the Company's regulation, which provides for the thorough and regular inspection of all the larger bridges on the railway over which night trains are run; and looking to the opinion which has been placed upon record by Government as to the condition of the bridge over the Goriattum river, I consider that the regulation in question provides for as much in the way of precaution as is necessary.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 20th July 1872, No. 517.

ADVERTING to your letter of the 9th instant, No. 523, and to paragraph 2 of the Order* of Government which accompanied it, I have the honour to solicit your attention to the enclosed extract from a letter from the Chief Engineer, in which Mr. Anderson requests me to obtain authority from the Government to cancel so much of their G. O. No. 2,197 of the 28th August 1871, on the subject of the precautions with respect to inspection and signalling as has reference to the Goriattum bridge.

* No. 1,568, dated 28th June 1872.

2. May I ask you to be kind enough to obtain and communicate to me the necessary authority at your early convenience.

Extract from a letter from the Chief Engineer, to the Agent and Manager of the Madras Railway, dated 20th July 1872, No. 348.

CONSULTING Engineer's letter No. 523, dated 9th instant, forwarding report of the Committee appointed to inquire into the state of the foundations of the bridges on the Madras Railway, together with Government order thereon.

A plan and estimate of the proposed protective works for the Palar bridge will be submitted in a few days.

Referring to the 2nd paragraph of the Government Order, I request you will be good enough to obtain from the Government authority to cancel so much of their G. O. No. 2,197 of 28th August 1871, on the subject of the precautions with respect to inspection and signalling as has reference to the Goriattum bridge.

The discussion on the subject of this latter order arose while you were in England; and I ask your attention to the fact that while acting as Agent and Manager I pointed out to the Government that I did not consider that the circumstances of the case as regarded the Poiney, Goriattum, and Palar bridges justified the expense and delay in the working of trains that the G. O. would occasion, and suggested that in the case of the Poiney and Goriattum bridges a special night watchman would sufficiently provide for the safe working of the line, while at the Palar the additional precaution had been taken of reducing the speed of trains over the bridge to ten miles an hour.

WHENEVER night trains run on your division it will be necessary to place special watchmen on all bridges which are over a hundred feet in length, measured from abutment to abutment. It will be the duty of each of these watchmen to walk over and examine his bridge a little before a train is expected, and show his signal on the side nearest the approaching train and 500 paces distant from the bridge. This will give a train time to pull up if anything should be wrong with the bridge.

(Signed) T. H. GOING,
Acting Chief Engineer.

No. 135. From the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd August 1872, No. 411.

IN further reference to the instructions conveyed in the Order of Government, dated the 28th August 1871, No. 2,197, I have the honour to submit a report upon the Poiney bridge, drawn up by the Committee appointed to examine the foundations of the bridges on the Madras Railway.

2. The only bridge which still remains to be reported on is the one over the Naggery river on the North-West Line, and I trust that I shall be able to submit this report before long.

Further Report of the Committee appointed to inquire into the state of the foundations of the Bridges on the Madras Railway.

In continuation of their previous report, and with reference to the Order of Government dated the 28th August 1871, No. 2,197, the Committee have now the honour to forward a list of the borings taken at the bridge over the Poiney river. The greatest depth of sand is shown to be 34½ feet.

2. The sanctioned plan and estimate are also forwarded. A comparison of these with the description of the bridge given by the Committee in their report dated the 15th July 1871, shows that, so far as the foundations are concerned, the sanctioned design was adhered to. The springing level of the arches seems to have been lowered 3 feet, but with the liberal proportion of waterway which has been allowed (25·5 square feet per mile of a catchment basin extending to 82·5 square miles) this is a matter of small importance. The fall of the river bed in the neighbourhood of the bridge averages 13·3 feet per mile.

3. The general conditions in the case of this bridge are not dissimilar to those in the case of the bridge over the Goriattum river. In both cases the foundations are far from what the Committee would feel disposed to recommend for bridges of such length and importance. The depth of sand in the bed of the Poiney river is considerably greater than in the bed of the Goriattum river; but on the other hand the fall is somewhat less, and the waterway is very much greater.

4. Upon full consideration of the circumstances, the Committee are inclined to recommend, for the protection of the Poiney bridge, the construction of curtain walls and stone flooring similar to what they recommended in the case of the Goriattum bridge. In deference, however, to the views expressed by Government, in their Order of the 28th June 1872, as to the security of the latter bridge without the addition of protective works, and feeling confident that the probability of scour in the bed of the Poiney river is certainly less than in the bed of the Goriattum river, the Committee do not desire to press upon Government the adoption of an opinion which, however, they feel themselves bound to record.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.
(„) C. J. SMITH, Captain, R.E.,
Deputy Consulting Engineer for Railways.
(„) B. ANDERSON,
Chief Engineer of the Madras Railway.

No. 136. ORDER THEREON, 10th September 1872, No. 2,148.

RAILWAY, No. 24.

The further investigation into the state of the Poiney bridge reported in the second paper above recorded has shown that that work was carried out, as to the foundations, in strict conformity with the sanctioned design. Not only the pier foundations rest on wells, but there are stone-in-chunam inverts between piers, under the face of which a line of wells runs, throughout, up and down stream. The springing of the arches indeed has been lowered 3 feet, but the allowance of waterway is still liberal; and in spite of the heavy fall of the river bed, which is of pure sand, there is no evidence of any effects of scour.

2. The Committee observe that the general conditions of this bridge are not dissimilar to those in the case of the bridge over the Goriattum river, and that in both cases the foundations are far from what the Committee would feel disposed to recommend for bridges of such length and importance. They accordingly record their opinion that, for the protection of the Poiney bridge, curtain walls and stone floorings similar to what they recommended in the case of the Goriattum bridge should be constructed, but in deference to the views expressed by Government in the order of the 28th June last they do not press their opinion.

3. The remarks of the Committee have led the Governor in Council to re-consider the decision arrived at with reference to the Goriattum bridge. On full consideration His Excellency in Council feels that the Government would not be justified in incurring the responsibility of rejecting in such a matter the deliberately formed and reiterated opinion of a Committee of professional men whose ability and experience entitle their recommendations to the highest respect.

4. The Governor in Council accordingly resolves to accept and act on the recommendations made by the Committee in regard to both the bridges referred to.

5. The Consulting Engineer for Railways will see that measures are adopted for carrying into effect the recommendations of the Committee, pending which the precautions enjoined in paragraph 3 of G. O. No. 2,097 of 28th August 1871, will continue to be observed.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following letters :—

No. 137. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 3rd July 1872, No. 1,400 :—

Adverting to paragraph 3 of the Proceedings of Government, No. 244, dated 29th May 1872, I have the honour to report that the Acting Collector of North Arcot considers that the construction of Taluq Cutcherries and Sub-Jails at Cooppum, Venkatagherry Cotah, and Arcot should have preference over the other buildings provided in the Budget.

2. In the statement appended to my letter No. 1,134, dated 12th June 1872, I pointed out a net saving of Rupees 7,089 in the grants for the buildings provided in the current year's Budget. To this may be added a further sum of Rupees 10,000 to be taken from the allotment for the Cutcherry at Gooriattum, thus raising the available amount to Rupees 17,089, which may be distributed to the three buildings named by the Collector in the following proportions :—

	RS.
Taluq Cutcherry and Sub-Jail at Cooppum	4,000
Do. do. at Venkatagherry Cotah	4,000
Do. do. at Arcot	9,089
	17,089

No. 138. From the Acting Collector of North Arcot, to the Secretary to Government, Public Works Department, dated Camp at Palmanair, 13th August 1872, No. 36.

I HAVE the honour to acknowledge the receipt of your memorandum of the 2nd instant, and to inform you in reply that I am perfectly aware of the existence of the order to which you allude regarding incomplete works; but the Superintending Engineer having under instructions from Government, as contained in their Order in the Public Works Department, dated 29th May 1872, No. 244, requested my opinion as to whether I would propose any, and what, changes in regard to the buildings entered in the Budget, with a view to providing funds for the execution of those more urgently required, I informed that officer in my letter of the 20th June last, No. 156, that I was of opinion that the Cooppum, Venkatagherry Cotah, and Arcot Cutcherries and Subsidiary Jails demanded a priority of construction over the other new public buildings proposed to be constructed in this district.

2. The Collector has never been consulted prior to the preparation and submission of the Imperial Budget of this district by the Superintending Engineer of the division as to what buildings were more urgently required. Had this been done the three buildings above referred to would not only have long ago found place in the Budget but would now be in a fair way towards completion.

3. On the last occasion that I inspected the Sub-Magistrate's Office at Cooppum, I found that the accommodation afforded by the building was of the most disgraceful description. The office accommodation of the Sub-Magistrate consisted of an old verandah fast tumbling down with a pandal or thatched shed in front. There is only one long narrow room for the confinement of convicted and under trial prisoners, which is always occupied by male prisoners. I was informed on inquiry that any female prisoners, whether under trial or convicted, have to sleep outside with the constables, composing the guard, and I have received information that instances have occurred in which constables, taking advantage of the opportunity so afforded them, have behaved improperly toward the females thus placed in their custody. This information of course *may* be incorrect, but it is nevertheless quite possible, and by no means improbable, that female prisoners at the Cooppum Subsidiary Jail have been insulted while at the mercy of their guards; and I, therefore, consider it most advisable that this Cutcherry and Subsidiary Jail should be put in hand forthwith, and pushed on to completion as rapidly as possible.

4. The present building at Venkatagherry Cotah is anything but a suitable one for a Sub-Magistrate's Office. It is small and affords but little accommodation, and taking into consideration the insalubrity of the climate of that part of the district, it is very desirable that some better office accommodation should be provided both for the Sub-Magistrate and for the parties attending his Court; and I may here observe that Mr. Rhenius, Inspecting Post Master, has, in his letter No. 1,475, dated 5th August 1872, brought prominently to my notice the extreme inadequacy of the accommodation now provided for the Post Office in the hovel that is dignified by the term Sub-Magistrate's Cutcherry. The Deputy Post Master has to do his work sitting amongst, and crowded by, the parties attending the Sub-Magistrate's Office in Magisterial or Revenue cases. It is very necessary

that in the new building a small additional room should be provided for the Deputy Post Master's Office.

5. The third building to the construction of which I would give preference is the Arcot Taluq Cutcherry. The present building is the oldest one of its kind in the district. It is a small old-fashioned mud building, quite unsuited to the requirements of the present time. It is fast falling to decay, and is not worth repairing. The taluq is, next to Wallajah, the largest and the most important in the whole district, and there is always a large concourse of people attending the office. I am strongly of opinion that its reconstruction should not be delayed. I may add that the Sub-Magistrate at Calastry has now a tolerably good Cutcherry, while the same official at Narrainavanam is extremely well accommodated in the old Taluq Cutcherry at that station. He is to be transferred to Poothoor when the new Cutcherry is built, but there need be no hurry in the matter; and as the sites for the new buildings have not yet been made over to the Public Works Department or the walls commenced, there will not be I hope much actual loss by letting the construction of the two Cutcherries stand over for some time longer.

6. The Superintending Engineer's letter No. 1,400, dated 3rd July 1872, which accompanied your memorandum under reply is herewith returned.

No. 139. ORDER THEREON, 10th September 1872, No. 2,149.

CIVIL WORKS, No. 11.

THE sums necessary to complete the under-mentioned Cutcherries and Subsidiary Jails in North Arcot District have in previous orders been allotted for them, namely :—

—	Estimate.	Previous Expenditure.	Balance to complete.
	RS.	RS.	RS.
1. Calastry	10,810	6,216	4,594
2. Wandiwash	7,020	3,701	3,319
3. Poothoor	10,810	4,937	5,873
4. Tripaty	7,190	5,586	1,605
5. Chittoor	8,120	4,037	4,083

2. In addition to which appropriations towards the completion of two other similar buildings have been made to the following extent, namely :—

—	Estimate.	Previous Expenditure.	Allotment.
	RS.	RS.	RS.
6. Poloor	27,900	18,880	7,089
7. Gooriattum	28,140	10,943	17,197

3. The Collector and Superintending Engineer now advocate allotments for three other Cutcherries and Jails as follows, namely :—

—	Estimate.	Previous Expenditure.	Allotment.
	RS.	RS.	RS.
8. Cooppum	11,500	377	4,000
9. Venkatagherry Cotah	11,230	570	4,000
10. Arcot	24,900	6,656	9,000

4. But while the latter recommends a transfer of funds for Nos. 8 and 9 from No. 6, the former would stop work with Nos. 1 and 3 on the ground that tolerable accommodation is already available, and that the sites for the new buildings have not yet been made over to the Public Works Department, or the walls commenced. Considering the expenditure already charged against the buildings, the Government presume there must be some mistake in this statement, and request the Superintending Engineer to explain how matters really stand.

5. Meanwhile a transfer of Rupees 9,000 from No. 7 to No. 10 is sanctioned, and Rupees 4,000 each allotted for Nos. 8 and 9, whereof Rupees 3,000 is available from the Reserve under Civil Buildings, and provision of the remaining Rupees 5,000 will be taken into consideration in the Financial Department.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 140. Read the following letter from the Acting Inspector-General of Police, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 3,103 :—

WITH reference to G. O., No. 228, dated 23rd August 1872, Public Works Department, I have the honour to report that there are no funds at present available for transfer to the Nellore District to meet the increased estimates of the four Station-houses in question, and I request the sanction of Government for the appropriation of the amount required (Rupees 700) from the sum of Rupees 1,583-11-0, sanctioned in G. O., No. 1,654, dated 9th July 1872, Public Works Department, for five huts at Gudur in the same district, the construction of which, the Superintendent of Police reports, has not been commenced as yet.

2. The Gudur huts will have to be proceeded with from the balance (namely, Rupees 883-11-0—1,583-11-0 = Rupees 700) available during 1872-73, and the further sum required for their completion will be provided for in the ensuing official year.

No. 141. ORDER THEREON, 10th September 1872, No. 2,150.

ACCOUNT, No. 17.

THE proposed transfer is sanctioned accordingly.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 142. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 29th August 1872, No. 384 :—

WITH reference to paragraph 5 of G. O., No. 1,935, dated the 14th August, I have the honour to report that immediately on the receipt of G. O. No. 7 of the 4th January 1872, therein referred to it was communicated to the Range Officers with the following endorsement :—

"The Officiating Superintending Engineer hopes and believes that the practice referred to by the Government does not prevail in this division. Range Officers will notice that it is strictly forbidden, and they will be held personally responsible for any infringement of these orders."

2. The present G. O. has also been communicated to the Range Officers, and their particular attention drawn to the warning therein contained.

No. 143. ORDER THEREON, 10th September 1872, No. 2,151.

ESTABLISHMENT, No. 8.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 144. Read the following letter from the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 27th August 1872, No. 1,161 :—

I HAVE the honour to inform you that being on tour with Mr. O'Ratigan, C.E., through his range I took the opportunity to test his acquaintance with the Colloquial Vernacular, in which by G. O., No. 151, dated 13th January 1870, every officer is required to pass.

2. Mr. O'Ratigan can readily understand all that is said to him in the course of his work, and can also always make himself understood; in fact, considering the time he has been studying Telugu, I consider his knowledge of it very creditable to his industry.

3. Mr. O'Ratigan has, I consider, fully qualified as regards the required test.

No. 145. ORDER THEREON, 10th September 1872, No. 2,152.

ESTABLISHMENT, No. 9.

COMMUNICATED to the Controller of Public Works Accounts.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 146. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Account—General,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 19th August 1872, No. 734-A.G. :—

I AM directed to acknowledge the receipt of your letter No. 1,785, dated the 26th ultimo, on the subject of reserve stock required in those divisions in which loan works are being executed; and in reply to convey the approval of the Government of India to the amounts fixed by the Government of Madras for the limit of reserve stock for the districts and projects enumerated therein, namely :—

	RS.
Godavery District	35,000
Kistna do.	35,000
Survapilly Project	25,000
Cauvery and Streevigoontum Project	15,000

No. 147. ORDER THEREON, 10th September 1872, No. 2,153.

ACCOUNT, No. 18.

CIRCULATED for the information and guidance of the Superintending Engineers of the 1st, 2nd, 6th, and 8th Divisions.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 148. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 25th July 1872, No. 1,560.

I HAVE the honour to acknowledge receipt of G.O. of the 10th July 1872, No. 1,663, and regret very much the Government should be so dissatisfied with the Kondakirla Ava Project as submitted to them, but I made no pretension to submit the scheme as a complete project, having personally inspected the locality and ascertained the feasibility of this part of the work, and the probability of the water-supply being sufficient. I urged the Collector to send up the project for increasing the store of water to save the remissions now annually granted to the villages irrigated by the Soradanuddi, leaving out for the present the cutting of the new channel to bring more land into cultivation until proper surveys and levels could be executed. I took upon myself the responsibility of recommending the scheme in an incomplete form to save present loss, having satisfied myself that this could be effected, leaving the more extended scheme for the new lands to be matured as soon as I could obtain the services of a Surveyor and get funds to pay for the necessary excavations.

2. I beg to observe with reference to the Acting Chief Engineer's note, paragraph 4, the co-efficient of ·86 used by me is not high for sluices with side walls approached by water having a great velocity as it has in all these large jungle streams with bed falls varying from 10 to 15 feet per mile; the co-efficient ·625 used by Major Oakes is for still water and for narrow openings in lock gates, etc.; under any circumstances with such sluices ·82 would not be too high a co-efficient to employ, which is the same as the late Major Ryves always used for the sluices here, and then the quantity of water, as calculated by me, would not be so much less as it is said to be; no registers had ever been maintained at this anicut until I had some kept in 1871, but even these had not been properly registered, the back water not having been noted. I was, therefore, obliged to approximate as well as I could with such information as I could obtain; the water is being properly registered now.

3. As Mr. Turner can do no work on the Jeypore Ghaut at this time of the year, I have directed him to complete this project, and will submit it as soon as I can get the thing together; but in the mean time I beg the estimate for raising the bund may be sanctioned at once to secure the revenue from lands liable to require remissions in the event of any failure of the rains in October or November all our registers showing that in those northern districts the supply of water from the south-west monsoon is far more reliable than that of the north-east monsoon, and therefore great losses can be prevented wherever these can be stored as in this locality to mature crops already only partially irrigated.

No. 165.

No. 149. *Note by the Acting Chief Engineer for Irrigation.*

In Mr. Laskey's letter No. 15, dated 11th April, to the Superintending Engineer of the 1st Division, he states that no remissions were granted to lands under channels supplied by the Ava, but that remissions were granted to the extent of Rupees 17,970-10-6 on lands dependent upon the river channels. The Collector estimates the remissions at Rupees 19,816-5-10. The area dependent upon the Kondakirla Ava tank is 1,289 acres; for this area, including loss by evaporation, 10 millions of cubic yards of water would be sufficient, while the capacity of the tank is stated now to be 19 millions.

2. The object of increasing the capacity of the Kondakirla Ava tank is in order to supplement the supply to the channels which are taken from dams in the Soradanuddi, situated below the Goda anicut from which the Kondakirla Ava tank is supplied; but as far as can be judged from the papers submitted, it would appear that to admit of water being conveyed to the river from the tank it is necessary that a new channel should be excavated, and as the Superintending Engineer himself stated that he doubted the accuracy of the levels taken, and as a portion of the channel was said to require a cutting 45 feet in depth, and it had not been ascertained whether the cutting would pass through soil or rock, and hence its probable cost could not be estimated, I stated in my note dated 20th June, that, in my opinion, the raising of the tank bank should not be undertaken till the project had been properly matured.

In G. O. No. 1,663 of 10th July.

3. The Superintending Engineer in his letter No. 1,560, dated 25th July, justifies himself for submitting the project in an incomplete form, on the plea that he had ascertained that the capacity of the Kondakirla Ava tank could be increased, and that a supply of water was available, by means of which the crops dependent upon the Soradanuddi might be saved, and the annual remissions be rendered unnecessary, and that he purposely omitted the 'cutting of the new channel to bring more land into cultivation.' From this it may be inferred that the cutting of the new channel is necessary for the proposed extension of cultivation only, but judging of the locality from the map it would appear that the new channel is necessary to admit of the existing cultivation obtaining a supplemental supply from the Kondakirla Ava tank, and if so the capacity of the tank should not be increased until the estimate for the channel has been completed.

4. The estimate for the tank bank has not been prepared as it should have been, and is unintelligible without the sections, and it is impossible to ascertain from the estimate what is to be the section of the bank when completed.

5. With regard to the Superintending Engineer's remarks relative to the co-efficient used by him, it is only necessary to observe that that co-efficient is applicable to open vents such as those of small bridges, but for submerged vents a co-efficient of ·625 is by no means too low.

6. If Mr. Turner's services are available he could not be better employed than in completing the investigations required relative to the Kondakirla Ava Project.

OOTACAMUND,
21st August 1872.

(Signed) R. F. OAKES, Captain, R. E.,
Acting Chief Engineer for Irrigation.

No. 150. ORDER THEREON, 10th September 1872, No. 2,154.

IRRIGATION, No. 8.

THE Chief Engineer for Irrigation will have been informed by G. O. No. 1,958 of 17th August, that the services of Mr. G. J. Turner are already available for any Irrigation Project that he may approve; and there will be no objection to such services being extended over a period sufficient to complete the investigation of the Kondakirla Ava Project, as with the assistance of Mr. Surveyor Fletcher, Mr. Turner's duties in connection with the Jeypore Ghaut may be carried out by occasional visits to that work.

2. The Chief Engineer for Irrigation should now place himself in direct communication with the Superintending Engineer of the 1st Division, and when necessary with Assistant Engineer Turner, and satisfy himself as to the points regarding which he seems to require further information.

3. Having obtained which, he will proceed to lay down such instructions for the elaboration of the project as may be requisite. The Superintending Engineer will take care that these instructions are carried out both as regards the co-efficient to be used in calculating discharges and in all other details.

(Signed) G. W. WALKER, Colonel, R. E.,
Secretary to Government.

No. 151. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 2,413 :—

1 Plan.
1 Estimate.
1 Specification.

I HAVE the honour to submit for sanction a plan and estimate, amounting to Rupees 600, for providing wooden palings above the parapet walls of the solitary cells on the Royal Bastion in the Fort, to prevent the prisoners of the regiment from escaping; the walls which surround that building being insufficient.

2. The plan and estimate have been approved by His Excellency the Commander-in-Chief.

No. 152. ORDER THEREON, 11th September 1872, No. 2,155.

MILITARY WORKS, No. 4.

SANCTIONED. It is presumed that the Superintending Engineer will meet the outlay from the sum at his disposal for Minor New Works.

(Signed) G. W. WALKER, Colonel, R. E.,
Secretary to Government.

No. 153. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to Government, Public Works Department, (Railway,) dated Simla, 27th August 1872, No. 1,391-G.R. :—

I AM directed to acknowledge the receipt of your docket No. 1,906, dated 10th August 1872, and in conveying the approval of the Government of India to the establishment lists of the Carnatic Railway for the second half of 1872, to state that when any alterations are made, it will be convenient if the lists exhibit in parallel columns the sanctions for the previous half-year—the actuals for ditto, and the proposals for the half-year in question.

No. 154. ORDER THEREON, 11th September 1872, No. 2,156.

RAILWAY, No. 25.

COMMUNICATED to the Consulting Engineer for Railways with reference to G. O., No. 1,906, dated 10th August 1872. Future alterations in establishment lists should be shown in the manner indicated.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 155. Read the following Proceedings of the Government of India, Public Works Department, (Railway,) dated Simla, 26th August 1872, Nos. 1,376-80—G. R. :—

Arrangements for recording the number of Troops in excess of the prescribed number travelling by an Extra Troop Train.

Read the following :—

Military Department, No. 324, Transport—Railway, dated the 13th August 1872, and accompaniments.

RESOLUTION.—The Government of India, in this department, are of opinion that, in order to prevent any misunderstanding, Railway Companies should be requested to communicate with the Government before issuing any order which will direct their subordinates to require from Military Officers other receipts or certificates than those already prescribed in Part II. of the regulations for the transport of troops by railway.

ORDER.—Ordered that this Resolution and the papers read be communicated to the Consulting Engineers to the Government of India for Guaranteed Railways at Calcutta, Lahore, and Lucknow, with the request that the matter may be arranged with the several Railway Companies in accordance with the terms of this Resolution.

Also to the Governments of Madras and Bombay in the Public Works Department (Railway) for information.

(Signed) H. DRUMMOND, Colonel, R.E.,
Officiating Deputy Secretary.

No. 156. ORDER THEREON, 11th September 1872, No. 2,157.

RAILWAY, No. 26.

COMMUNICATED to the Consulting Engineer for Railways for information.

(Signed) G. W. WALKER, Colonel, R. E.,
Secretary to Government.

No. 157. Read the following letter from the Acting Chief Engineer for Irrigation, to the Secretary to Government, Public Works Department, dated Ootacamund, 31st August 1872, No. 31 :—

I HAVE the honour to forward herewith registers of lands taken up by the Madras Irrigation and Canal Company in the Cuddapah District under Classes A, B, C, and D between 1870* and 1872,* together with two bills, amounting in aggregate to Rupees 540-9-10, for

* June 1870.	August 1871.
July ,,	October ,,
May 1871.	March 1872.

compensation to be paid thereon; and to request that you will be good enough to obtain the sanction of Government to the same.

No. 158. ORDER THEREON, 11th September 1872, No. 2,158.

IRRIGATION, No. 9.

SANCTIONED against the provision in Part VI. of the Budget under "Purchase of land," Cuddapah District.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 159. Read the following letter from the Officiating Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 29th August 1872, No. 121:—

I HAVE the honour to forward, for sanction and provision of funds when available, an estimate of Rupees 1,030 for three Duff's cooking ranges for the Wellington Barracks, duly approved of by His Excellency the Commander-in-Chief.

No. 160. ORDER THEREON, 11th September 1872, No. 2,159.

MILITARY WORKS, No. 5.

THE estimate of Rupees 1,030 is sanctioned, but the execution of the work must be deferred until funds are available.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 161. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 4th September 1872, No. 413:—

WITH reference to your memorandum No. 179, dated 17th August 1872, I have the honour to forward herewith a statement showing the progress made in the construction of the Telegraph Office at Negapatam up to the 1st instant.

Statement showing the progress made in the construction of Telegraph Office at Negapatam.

Main Building.

Foundations	Completed.
Superstructure	One-third completed. Walls raised 9½′ throughout; all door and window frames fixed.
Wood-work	Completed, with the exception of ventilators and screens, and partly fixed.

Out-houses.

Cookroom and Godown	Foundation half completed.
Culvert	Five-eighths completed.
Materials at site	22,250 bricks, 243 parahs of chunam, and 80 parahs of sand.

TANJORE,
4th September 1872.

(Signed) J. O. HASTED, Major, R.E.,
Officiating Superintending Engineer, 6th Division.

No. 162. ORDER THEREON, 12th September 1872, No. 2,160.

CIVIL WORKS, No. 12.

ORDERED that the statement submitted with the foregoing letter be communicated to the Officiating Director-General of Telegraphs in India, with reference to his letter of the 2nd August 1872. It has been ascertained from the Consulting Architect that the whole of the grant of Rupees 50,000 in the current year's Budget for the Madras Telegraph Office will be utilized. The Government of India have permitted the completion of the Offices at Bellary, Negapatam, Cocanada, and Rajahmundry in anticipation of an allotment of funds later in the year.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 163. (DOCKET No. 2,161, dated 12th September 1872.)

COPY of the above forwarded to the Officiating Director-General of Telegraphs in India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 164. Read the following letter from the Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Camp at Salem, 4th September 1872, No. 110:—

1 Abstract Estimate.
1 Specification.

I HAVE the honour to submit, for the sanction of Government from the grant of Rupees 3,000, Minor New Works Military at Bangalore, an estimate of Rupees 121 for providing V shaped drain to Staff Serjeants' quarters, Royal Horse Artillery, Bangalore.

2. The estimate has been approved of by His Excellency the Commander-in-Chief.

No. 165. ORDER THEREON, 12th September 1872, No. 2,162.

MILITARY WORKS, No. 6.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 166. Read the following Endorsement of the Consulting Engineer for Railways, dated Madras, 2nd September 1872, No. 458 :—

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 17th August 1872, No. 594.

ADVERTING to Order of Government, No. 298, dated the 31st January 1872, I have the honour to forward herewith a bill for travelling expenses (Rs. 117-3-0) incurred by Mr. W. R. Robinson in proceeding to Cuddalore to serve on the Committee appointed by Government for the examination of the foundations of the Vellaur bridge.

2. May I ask you to be kind enough to forward me a cheque for the amount at your convenience.

SUBMITTED for the sanction of Government.

2. Mr. W. R. Robinson's services were made available for the duty under Government Order, No. 298, dated 31st January 1872.

3. A similar bill was passed by Government on the 12th July 1864, when one of the Railway Company's Engineers was nominated to inspect and report upon the work performed on the Ahtoor Ghaut on the Shevaroy Hills.

G. O. No. 2,014.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 167. ORDER THEREON, 12th September 1872, No. 2,163.

RAILWAY, No. 27.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 168. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 2,459 :—

THE Officer in charge of Polur Range has brought to my notice that the verandahs of the old barracks at Arnee are fast falling into ruin, the palmyrah rafters are nearly rotten, the bamboo reepers quite so, and at every storm of rain and wind large quantities of tiles fall and are broken, the windows and doors are also going fast, I have, therefore, the honour to suggest that the sanction of Government may be obtained for removing the verandah and all other wood-work, and disposing of the materials by public auction.

No. 169. ORDER THEREON, 12th September 1872, No. 2,164.

CIVIL WORKS, No. 13.

APPROVED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 170. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 27th August 1872, No. 1,162 :—

REFERRING to my letter No. 667 of 25th June last, and G. O., No. 72, dated 6th July 1872, in reply thereto I have the honour to inform you that the Principal, Civil Engineering College, in his letter No. 309-C of 6th instant, informs me that he has no passed students available for employment as Overseers ; I have, therefore, the honour to request that Government will permit me to confirm P. Striramulu Naidoo, now Acting Taluq Overseer, in the Kurnool Range.

2. As before mentioned, this man is well qualified, and highly recommended, and as his father and family are resident at Kurnool, we have a quasi guarantee that he will remain there, and this is no small point, as no one, who can possibly avoid it, will serve in the Kurnool or Cuddapah Districts, and those who are there are perpetually falling sick, and intriguing to get away to some other district.

No. 171. ORDER THEREON, 12th September 1872, No. 2,165.

ESTABLISHMENT, No. 10.

HIS Excellency the Governor in Council permits the continued employment of Striramulu Naidoo as Acting Overseer in the Kurnool Range until he shall have passed the required test, or until the services of a duly qualified Overseer are available.

2. Now that there are three grades of Overseers, and appointments in that rank are greatly enhanced in value, the Governor in Council resolves to notify that none but fully qualified Overseers shall be promoted into either of the higher grades or hereafter confirmed in the lower grade.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following letters :—

No. 172. From the Officiating Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 29th August 1872, No. 122.

WITH reference to G. O. No. 1,997 of 21st August 1872, I have the honour to state that the available balance under Minor New Works, Military, Coimbatore, is only Rupees 172; I, therefore, beg to propose the transfer of Rupees 128 from under Minor New Works, Military, Malabar, to the same head in Coimbatore, to enable me to appropriate the necessary funds for improving the Rest-house Serjeant's quarters at Erode, sanctioned in the G. O. above quoted.

No. 173. From the same Officer, dated Coimbatore, 3rd September 1872, No. 128.

I HAVE the honour to request the sanction of Government for a transfer of Rupees 228 from South Canara under Minor New Works, Military, to the same

head in Coimbatore District, instead of the transfer of Rupees 128 from Malabar, requested in my letter No. 122 of 29th August 1872, as the available balance in the latter district is not sufficient to meet this transfer after providing for the work, sanctioned in G. O. No. 2,018 of 24th August 1872.

No. 174. ORDER THEREON, 12th September 1872, No. 2,166.

ACCOUNT, No. 19.

THE transfer of Rupees 228 under "Minor New Works, Military," South Canara District, to the same head of service in the Coimbatore District, is sanctioned as proposed in the second letter above recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 175. Read the following letter from the Acting Deputy Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 21st August 1872, No. 435 :—

WITH reference to G. O. dated the 16th August 1872, No. 162, communicating copy of telegram from the Secretary to the Resident, Hyderabad, to the effect that the Resident accepts the terms proposed by the Government of India for the transfer to His Highness the Nizam's Government of eighty-seven miles of permanent-way belonging to the Great Southern of India Railway Company, I have the honour to point out that, so far as I am at present informed, the Government of India have not intimated their acceptance of the terms proposed by the Board of the Great Southern of India Railway Company, as detailed in the correspondence printed with G. O. dated 2nd July, No. 1,591 ; neither have I received from the Agent of the Great Southern of India Railway Company any intimation that he is prepared to modify those terms. Under these circumstances, before communicating further with the Agent, I am under the necessity of asking you to be so good as to inform me what are " the Government of India's terms" alluded in the telegram from the Secretary to the Resident, Hyderabad.

2. The terms last proposed by the Government of India* were, so far as I am informed, that the Great Southern of India Railway Company should receive the cost price of the materials stored at Negapatam, Rupees 22,500 per mile, from His Highness the Nizam's Government, and the balance from the Government of India.

* *Vide* G. O., No. 1,081, dated 26th April 1872.

No. 176. ORDER THEREON, 12th September 1872, No. 2,167.

RAILWAY, No. 28.

RECORDED, with reference to G. O., No. 1,960, dated 17th August 1872, which was subsequently communicated to the Consulting Engineer for Railways.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 177. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 24th August 1872, No. 1,965 :—

With reference to G. O., No. 1,822, dated 1st August 1872, I have the honour to state that there are large under-sluices in both the Godavery and Kistna anicuts, and through these the fish can easily get up the river when there is a good deal of water in it, as then, owing to the rise of the backwater, there is little or no current; probably this will account for the fish not using the ladder in the Kistna for there is an abundance of fish always in this river above the Godavery anicut.

No. 178. Order thereon, 12th September 1872, No. 2,168.

IRRIGATION, No. 8.

Ordered to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 179. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Railway,) to the Governments of Madras and Bombay, and the Consulting Engineers at Calcutta, Lahore, and Lucknow, dated Simla, 23rd August 1872, Nos. 1,365—69 G.R. :—

From Quarter Master General, to Military Department, No. 2,167, dated 17th June 1872.
From Military Department, to Quarter Master General, No. 498, Transport—Railway, dated 25th June 1872.
From Quarter Master General, to Military Department, No. 3,490, dated 30th July 1872.
From Military Department, to Government of India, Public Works Department, No. 270, Transport—Railway, dated 10th August 1872.

I am directed to forward a copy of the papers noted in the margin, detailing the instructions issued by the Quarter Master General's Department for the safe custody of the padlocks and keys to be used with baggage waggons in extra troop trains. Under these instructions, the responsibility for the safe custody of the padlocks and keys rests with the Military Authorities; the intervention of the Railway Authorities being restricted to aiding in the return of the padlocks to the particular station from which supplied, by granting "free transit labels;" and I am desired to request that the assent of the Railway Companies may be obtained to the proposed arrangement.

From Colonel P. S. LUMSDEN, Quarter Master General, to the Secretary to the Government of India in the Military Department, dated Simla, 17th June 1872, No. 2,167.

With reference to Military Department letter No. 510 (Transport—Railways), dated 16th October 1871, conveying the decision of Government regarding the responsibility of Railway Companies for the baggage of troops conveyed by extra troops trains, I am desired by the Right Honourable the Commander-in-Chief to suggest that padlocks and keys to be used with baggage

waggons may be deposited at railway stations in charge of the Station Master, by whom the number required will be made over to the Officer Commanding the troops, the latter furnishing a receipt for the same.

2. At the end of the journey the padlocks and keys will be made over by the Commanding Officer to the Station Master, whose receipts will be forwarded by the said Commanding Officer to the Staff Officer, who originally despatched the train, or, in the event of a transfer of trains, to the despatching officer at the station from which the padlocks were received.

3. His Excellency foresees considerable inconvenience and trouble both to staff and regimental officers, if any other course is adopted. The officers of this department have no means at their disposal for securing the safety of a large number of padlocks, neither have regimental officers; and at the end of the journey, when the troops march away from a station, unless the railway officials are authorized to take the padlocks over, it will be scarcely possible to avoid their being mislaid or lost.

From Colonel H. K. BURNE, Secretary to the Government of India, Military Department, to the Quarter Master General, dated Simla, 25th June 1872, No. 498.

I AM directed to acknowledge your letter, "Railways," No. 2,167, dated 17th June 1872, regarding the custody of the padlocks and keys required to secure the baggage waggons of extra troop trains, and in reply to state that the Right Honourable the Governor-General in Council is of opinion that probably the Railway Authorities would object to take charge or to be held responsible for the instant provision of these articles, which are the property of the Military Authorities. Should they, however, make no objection to doing so, His Excellency in Council considers that it would be far more expedient that these padlocks and keys should not remain in the railway station, but in the custody of those for the protection of whose baggage they are intended.

2. I am to inquire, therefore, whether, under the orders of the Right Honourable the Commander-in-Chief, some arrangement cannot be devised in your department which shall secure the safe keeping of the padlocks without incurring the loss and inconvenience contemplated in your letter under reply.

From Colonel J. WRIGHT, Officiating Quarter Master General, to the Secretary to the Government of India, Military Department, dated Simla, 30th July 1872, No. 3,490.

IN acknowledging the receipt of Military Department No. 498 (Transport—Railways), dated 25th June 1872, I am directed by the Right Honourable the Commander-in-Chief to intimate that instructions have been issued for the padlocks and keys used with troop extra trains to be issued as required and taken charge of by Deputy Assistants Quarter Master General, Station Staff Officers, and Transport Serjeants, as may be most convenient at the different stations, the intervention of the Railway Authorities being restricted to aiding in the return of the padlocks to the particular station from whence supplied, by granting "free transit labels."

2. I am accordingly to convey His Excellency's recommendation that the necessary arrangements may be entered into with the Railway Authorities to comply with applications for "free transit labels" for this purpose, when required by any of the officials above named.

Office Memorandum by Colonel A. JOHNSON, Officiating Deputy Secretary to the Government of India in the Military Department, dated Simla, 10th August 1870, No. 270.

WITH reference to the correspondence marginally cited, regarding the responsibility of Railway Companies for the baggage of troops conveyed by extra troop trains, the undersigned is directed to transmit to the Public Works Department the documents noted in the margin, showing the instructions issued for the safe

From Public Works Department, No. 1,938-R., dated 5th October 1871.
To ditto No. 511, dated 16th do. do.
From Quarter Master General, No. 2,167, dated 17th June 1872. } Return requested.
To ditto No. 498, dated 25th June 1872. }
From ditto ,, 3490, ,, 30th July ,, }

custody of the padlocks and keys to be used with baggage waggons, and to request that if there be no objection, the proposed arrangements may be made with the Railway Authorities in view to the return of these articles to the particular station whence they were supplied by the grant of "free transit labels."

No. 1,370-G.R.

Copy forwarded to the Military Department for information, with reference to its memorandum No. 270, (Transport—Railway,) dated 10th August 1872, the original enclosures of which are herewith returned as requested.

No. 180. Order thereon, 12th September 1872, No. 2,169.

RAILWAY, No. 29.

Communicated to the Consulting Engineer for Railways with a view to the assent of the Railway Companies being obtained to the arrangement proposed in these papers.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 181. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 15th August 1872, No. 429:—

In submitting for sanction with my letter No. 330, dated 26th June 1872, seven estimates for furnishing and equipping certain refreshment-rooms on the Madras Railway, the proposed expenditure for each additional work being below Rupees 5,000, I asked for orders regarding the incidence of the charge.

2. I mentioned that the ruling of the Government of India was to the effect that no estimate for any work was to be passed against Capital on lines that have been opened for more than two years if less than Rupees 5,000; and that the Agent referred to his previous letter of 8th September 1871,* in which, under instructions from the Board of Directors, he had requested that the rule in question might be held in abeyance for twelve months, which letter having been submitted to the Government of India, and no reply received to the proposal, he assumed that the suspension of the rules suggested by the Board had been agreed to.

* G. O., No. 257, dated 10th October 1872.

3. I referred again to this matter in my letter No. 400, dated 1st August 1872, when submitting the estimate for a new station at Veerinjepooram.

4. I have the honour now to forward a letter* from the Agent enclosing an extract from a letter† received from the Board of Directors in which they decline to accept the principle of

* No. 519, dated 22nd July 1872.
† „ 494, „ 21st June „

charging to Revenue all items of expenditure on lines which have been open to traffic for two years, if the cost of any such item exceeds Rupees 1,000, or if the aggregate cost of such items during any half-year exceeds Rupees 5,000.

5. The correspondence is with special reference to the bridge at the Erode Station, the cost of which the Government, in their Order No. 985, dated 16th April 1872, directed should be charged to Revenue.

6. I beg that the Government of India may be moved to issue definite instructions on the general question at issue.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 22nd July 1872, No. 519.

I HAVE the honour to forward, for submission to Government, a copy of paragraph 8 of the Secretary's letter No. 494, dated London, the 21st of June, as well as of the correspondence alluded to therein with the Secretary of State, having reference to the proposal to charge to Revenue all items of expenditure on Guaranteed Railways or sections thereof, which shall have been completed and open for traffic for two years, which do not exceed Rupees 5,000.

2. From the paragraph of the Secretary's letter it will be observed that the Directors of this Company decline to carry that principle further than Rupees 1,000 in each particular case.

3. Under this ruling I have the honour to apply for the sanction of Government to provide an over-bridge at Erode at the cost of Capital.

Extract from a letter from the Secretary, Madras Railway Company, No. 494, dated London, the 21st June 1872.

As to over-bridge required at Erode, and proposal to charge to Revenue items of expenditure not exceeding Rupees 5,000 on lines open for two years.

PARAGRAPH 8.—In reply to your request in paragraph 32 of No. 998 for the instructions of the Board on the subject of the new over-bridge required to be built at Erode, I am directed to forward to you copy of correspondence with the Secretary of State, relative to the proposal to charge to Revenue all items of expenditure on Guaranteed Railways or sections thereof, which shall have been completed and opened for traffic for two years, which do not exceed Rupees 5,000, by which you will perceive that the Board have declined to carry that principle further than Rupees 1,000 in each particular case. Should this arrangement be assented to, as the estimate for the over-bridge exceeds Rupees 1,000, it would be dealt with as usual according to the principles laid down in the Despatch of the Secretary of State of the 9th March 1864, under which, as it is clearly an additional building not previously contemplated, it ought to be charged against Capital, and the Board authorize its construction provided its charge against Capital be allowed.

Letter from Herman Merivale, Esq., to J. Byrne, Esq., 26th April 1872, and from J. Byrne, Esq., to Under Secretary of State, No. 2,811, 24th May 1872.

From HERMAN MERIVALE, Esq., to JULIAN BYRNE, Esq., dated India Office, 26th April 1872.

I AM directed to acquaint you, for the information of the Madras Railway Board, that it has been proposed by the Government of India that, after a Guaranteed Railway or Section thereof shall have been completed and opened for traffic for two years, all items of expenditure thereon, of whatever kind which do not exceed Rupees 5,000 each, shall be borne by Revenue. The Duke of Argyll agrees with the Government of India as to the expediency of the proposed arrangement, and will be glad to learn that no objection to it is entertained by your Board.

From JULIAN BYRNE, Esq., to the Under Secretary of State for India, dated London, 24th May 1872, No. 2,811.

I HAVE the honour to acknowledge the receipt of Mr. Merivale's letter of the 26th ultimo, intimating that it has been proposed by the Government of India that, after a Guaranteed Railway or Section thereof shall have been completed and opened for traffic for two years, all items of expenditure thereon, of whatever kind which do not exceed Rupees 5,000 each, shall be borne by Revenue, and stating that the Duke of Argyll will be glad to learn that the Board entertain no objection to the proposed arrangement.

In reply I am instructed to state that the Board consider it very desirable that uniform principles for the discrimination of charges against Capital and Revenue should be followed in all cases without reference to amount, and they would have much preferred to adhere to those clearly laid down in the Secretary of State's Despatch of the 9th March 1864. But in order to meet the wishes of the Government of India as far as practicable, they will consent to the adoption of the proposal in regard to charges for works executed on emergency, with the sanction of Government, and not exceeding Rupees 1,000 at one time provided that these emergent outlays do not, in the aggregate, exceed Rupees 5,000 in any half-year, and that estimates for all other expenditure chargeable against Revenue and Capital shall before the works be entered upon be submitted for the Board's approval with the explanations of their officers and the views of Government thereupon.

No. 182. ORDER THEREON, 12th September 1872, No. 2,170.

RAILWAY, No. 30.

ORDERED that the Government of India be addressed on this subject.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 183. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 12th September 1872, No. 2,171.

RAILWAY, No. 31.

SIR,—In Colonel Carpendale's letter No. 2,580, dated 10th October 1871, were forwarded for the consideration of the Government of India certain papers setting forth the objections entertained by the Board of Directors of the Madras Railway to the instructions issued for the guidance of certain Companies in making up their Capital Accounts; and in a subsequent letter No. 1,691, dated 13th July 1872, when applying for sanction to certain estimates therewith submitted, I requested the instructions of the Government of India as to the incidence of the charge.

2. I am now directed to forward a letter from the Consulting Engineer enclosing one from the Agent and Manager of the Madras Railway, and an extract from a letter from the Board of Directors, in which they decline to accept the principle laid down of charging to Revenue the cost of all items below Rupees 5,000, and I am to request the instructions of the Government of India on the subject.

No. 184. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 26th August 1872, No. 1,156 :—

As the Principal of the Civil Engineering College on a reference made to him by me states that he has no persons who have passed the required test for Taluq Overseer to take up the vacancies in the Kurnool District, I have the honour to request the approval of Government to the appointment of P. Kristnamacharry and M. Francis as Acting Taluq Overseers.

2. These men were students in the Civil Engineering College, and obtained certificates for Overseers, Bengal Department Public Works, and are at present employed as Local Fund Overseers in the Cuddapah District.

No. 185. ORDER THEREON, 12th September 1872, No. 2,172.

ESTABLISHMENT, No. 11.

THE entertainment of the men in question as temporary Taluq Overseers is sanctioned on the terms of G. O., No. 2,165, dated 12th of September 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 186. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Camp at Upper Anicut, 16th August 1872, No. 345 :—

I HAVE the honour to forward herewith, for the favourable consideration of Government, a letter from Captain Montgomerie, R.E., calling attention to Government Order, No. 2,802, dated 26th August 1869, on an appeal made by him, and forwarded by the Superintending Engineer, against his supersession in the Department Public Works by Lieutenant Morant.

From Captain P. MONTGOMERIE, R.E., Executive Engineer, No. 1 Range, to the Superintending Engineer, 6th Division, dated Tanjore, 13th August 1872, No. 471.

I HAVE the honour to draw your attention to G. O., No. 2,802, dated 26th August 1869, in the last paragraph of which it is stated that my claims for promotion will not be lost sight of.

2. It is now three years since the above order was issued by the Madras Government on my appeal against being superseded by Captain then Lieutenant Morant, an Officer very considerably my junior both in the Corps and in the Public Works Department ; and as Captain Morant's name still appears above mine in the last official list, I have the honour to request you will be so good as to bring the oversight duly to notice, in order that it may be rectified in the next official return.

No. 187. ORDER THEREON, 12th September 1872, No. 2,173.

ESTABLISHMENT, No. 12.

ADVANTAGE will be taken of the approaching reorganization of the Public Works Department to re-arrange the names of Captains Mead, Montgomerie, Vibart, and Morant in the above order in the list of Executive Engineers, second grade; that being the order in which their length of good service in the department would have relatively ranked them, but for the accident of Captain Morant's having been for a time transferred to the Bombay Department Public Works and returning from it in a higher grade than he would have attained had he remained in his own Presidency.

2. As Captains Pennycuick, Ross Thompson, and Smalley successively rise to the second grade, their names will also be recorded in the departmental lists above that of Captain Morant.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 188. Read the following letter from the Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Camp at Moganoor, 28th August 1872, No. 106 :—

3 Abstract Estimates.
2 Specifications.
4 Plans.

I HAVE the honour to submit, for the sanction of Government for entry in the Imperial Budget for the year 1873-74, the under-mentioned estimates for Military buildings at Bangalore, namely :—

	RS.
1. Constructing two Armourers' Shops for Native Infantry Regiments, Bangalore	2,500
2. Constructing a Verandah in rear of Mysore Gate Guard-room, do. ..	770
3. Erecting three Sentry Sheds for the Sentries belonging to Mysore Gate Guard, Fort, at Bangalore	600
Total...	3,870

2. The plans and estimates have been approved of by His Excellency the Commander-in Chief.

No. 189. ORDER THEREON, 13th September 1872, No. 2,174.

MILITARY WORKS, No. 7.

SANCTIONED, but as the estimates do not exceed Rupees 2,500 they cannot find a place in the Budget. If provision cannot be made for the works from the grant for Minor New Works, application for the requisite funds should be submitted in due course after 1st April next.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 190. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 22nd August 1872, No. 1,934 :—

1 Copy of letter No. 66, dated 1st August, from Captain Beatty.
1 Comparative Statement.

IN forwarding herewith a comparative statement showing the difference between the original and revised estimates for constructing a dead-house at the Civil Dispensary at Vizagapatam, I have the honour to request you will be good enough to obtain the sanction of Government for the excess, Rupees 103, over the original sanctioned estimate. The excess is owing to the provision of ventilation along the ridge of the roof and for iron-plate ventilators, also for asphalte at the bottom of the walls and 2 feet of brick-work at top of the walls as a protection against white-ants.

2. Copy of letter from the Executive Engineer in charge Vizagapatam Range, received with the comparative statement, is enclosed for your information.

No. 191. ORDER THEREON, 13th September 1872, No. 2,175.

CIVIL WORKS, No. 14.

* G. O., No. 2,075, dated 25th June 1869.

UNDER the explanation afforded of the necessity for increased ventilation in the building sanctioned* as a dead-house in connection with the Civil Dispensary at Vizagapatam and for protection from white-ants, the Government approve of the revised estimate of Rupees 1,210.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 192. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, (Railway,) dated Simla, 29th August 1872, No. 1,400-G.R. :—

I AM directed to acknowledge the receipt of your letter No. 1,861, dated the 7th August 1872, with enclosure, and, under the circumstances represented, to convey the sanction of the Government of India to an increase of expenditure from Rupees 20,00,000 to Rupees 22,50,000 on account of the item "Construction of line" in the estimate for the extension lines of the Great Southern of India Railway, sanctioned in Public Works Department No. 325-G.R. of the 2nd March 1872, and registered as No. 46-M.R. of 1871-72.

2. The register sanction of this office has been altered accordingly.

No. 193. ORDER THEREON, 13th September 1872, No. 2,176.

RAILWAY, No. 32.

COMMUNICATED to the Consulting Engineer for Railways with reference to G. O., No. 1,860, dated 7th August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 194. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 453:—

AGREEABLY to the instructions conveyed in the Order of Government dated the 28th June 1872, No. 1,568, I have the honour to submit a plan and an estimate of the cost of the protective works recommended in the case of the Palar river by the Committee appointed to examine the foundations of bridges on the Madras Railway.

2. The estimate amounts to Rupees 80,757, and as the nature of the works provided for was fully explained by the Committee in their report dated the 24th May 1872, I have only now to solicit sanction for the expenditure.

3. The necessary provision is made in Schedule B. of the Budget for 1872-73.

No. 195. ORDER THEREON, 13th September 1872, No. 2,177.

RAILWAY, No. 33.

ORDERED that the estimate received with this letter be forwarded for the sanction of the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 196. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 13th September 1872, No. 2,178.

RAILWAY, No. 34.

SIR,—The Committee which His Excellency the Governor in Council deemed it expedient to appoint for the purpose of examining the foundations of the bridges on the Madras Railway having reported the necessity for the immediate protection of the Palar bridge on the South-West Line by curtain walls resting on lines of wells where the depth of sand exceeds 13 feet, and enclosing stone-in-chunam floors some 90 feet in width; authority was granted for the commencement of the work in anticipation of sanction to estimates which the Consulting Engineer was directed to submit in due course.

2. Lieutenant-Colonel Shaw-Stewart now forwards the accompanying estimate, amounting to Rupees 80,757, accompanied by a plan explanatory of works proposed, and I am to request that the sanction of the Government of India thereto may be accorded as early as practicable.

3. Provision for the work is made in Schedule B. of the Budget for the current year.

No. 197. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 462 :—

I HAVE the honour to forward, for submission to the Government of India, the Revenue Account of the Madras Railway for the month of June 1872.

MADRAS RAILWAY.

DR. *Revenue Account for the Month ending 30th June* 1872. CR.

Expenditure.	Amount.	Per cent. of Revenue.	Earnings.	Amount.
	RS. A. P.			RS. A. P.
To Maintenance of Way, Works, and Stations (Abstract A.) ...	92,299 10 9	15·86	By Coaching Traffic (Abstract H.)	1,89,238 9 9
,, Locomotive Expenses (Abstract B.) ...	92,181 5 1	15·83	,, Goods Traffic (Abstract I.)	3,35,782 14 7
,, Carriage and Waggon Expenses (Abstract C.)	18,775 14 6	3·23	,, Electric Telegraph Earnings	1,686 7 10
,, Traffic Expenses (Abstract D.)	46,172 0 1	7·93	,, Sundries (Abstract K.)	55,433 12 4
,, General Charges (Abstract E.)	53,634 13 10	9·21		
,, Special and Miscellaneous Expenditure (Abstract G.) ...	38,116 11 9	6·55		
,, Cheyaur Bridge Restoration	64,172 9 2	11·02		
	4,05,353 1 2	69·63		
,, Balance Net Earnings.	1,76,788 11 4	30·37		
Total...	5,82,141 12 6	100·00	Total...	5,82,141 12 6

(Signed) J. CRAMP,
Chief Accountant.

(Signed) R. B. ELWIN,
Agent and Manager.

Examined and found correct.

(Signed) F. CHURCH,
Chief Auditor.

(Signed) C. M. MOBERLY, Captain,
Examiner of Railway Accounts.

Approved and passed.

MADRAS,
28th August 1872.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

ABSTRACT A.

Maintenance of Way, Works, and Stations for June 1872.

	RS. A. P.	RS. A. P.
1ST.—SALARIES, OFFICE EXPENSES, AND GENERAL SUPERINTENDENCE—		
(1.)—Engineers' salaries	*9,688 4 1	
(2.)—Allowances, including travelling expenses of all kinds	719 4 7	
(3.)—Subordinate Superintendents	3,829 0 10	
(4.)—Allowances of do.	83 8 0	
(5.)—Overtime allowances	....	
(6.)—Office expenses	4,849 0 8	
		19,169 2 2

* Includes Home payments, Rupees 2,227-4-5.

Maintenance of Way, Works, and Stations, etc.—(Concluded.)

	RS. A. P.	RS. A. P.
2ND.—MAINTENANCE AND RENEWAL OF PERMANENT-WAY—		
(1.)—Wages	26,878 6 4	
(2.)—Materials	14,357 6 1	
		41,235 12 5
3RD.—REPAIRS OF BRIDGES, ETC.—WAGES AND MATERIALS—		
(1.)—Bridges and tunnels	20,143 12 8	
(2.)—Miscellaneous, including earthwork, roads, fencing, etc.	5,614 2 10	
		25,757 15 6
4TH.—REPAIRS OF STATIONS AND BUILDINGS—WAGES AND MATERIALS—		
(1.)—Repairs of buildings of every description, including station-yards and signals, but excepting quarters of the staff	4,184 9 3	
(2.)—Repairs of staff quarters	1,044 8 11	
		5,229 2 2
5TH.—MAINTENANCE BY CONTRACT	....	
6TH.—UNCLASSIFIED EXPENDITURE—		
(1.)—Plantations	....	
(2.)—Tools and Plant...	2,419 4 8	
(3.)—Loss on Stores, etc.	....	
		2,419 4 8
Total...	....	93,811 4 11
Deduct sum chargeable to Cheyaur Bridge Restoration..	....	1,511 10 2
	....	92,299 10 9

Miles maintained.	Departmentally.	By Contract.	Total.
Railway Line {Double	....	....	....
Railway Line {Single	707¼	....	707¼
Sidings...	81¼	....	81¼
	....	....	788½

31st *July* 1872.

(Signed) F. B. HANNA,
For *Chief Engineer.*

ABSTRACT B.

Locomotive Expenses for June 1872.

	RS. A. P.	RS. A. P.
1ST.—GENERAL SUPERINTENDENCE—		
(1.)—Salaries of Locomotive Superintendent and Assistants	*3,061 1 8	
(2.)—Allowances of ditto, including travelling allowances	128 10 5	
(3.)—Subordinate Superintendents	*3,979 14 10	
(4.)—Allowances, including travelling allowances ...	898 13 10	
(5.)—Overtime allowances	363 11 5	
(6.)—Office expenses	2,566 12 3	
		10,999 0 5
2ND.—RUNNING EXPENSES—(*Wages connected with the working of Locomotive Engines*)—		
(1.)—Wages of Drivers and Firemen	11,191 2 10	
(2.)—Overtime allowances	2,604 1 9	
(3.)—All labour connected with fueling, cleaning, and looking after engines in yards	2,564 9 8	
(4.)—Contingent expenses, including clothing and travelling expenses	* 78 3 8	
		16,438 1 11

* Includes Home payments, Rupees 1,221-1-0.

Locomotive Expenses, etc.—(Concluded)

			Rs.	A.	P.	Rs.	A.	P.
3RD.—FUEL—								
(1.)—Coal	Cwt.	$14,596\frac{5}{112}$	13,136	7	0			
(2.)—Coke	,,	$3,243\frac{51}{112}$	5,189	8	5			
(3.)—Patent Fuel	,,	$2,774\frac{11}{112}$	3,328	14	8			
(4.)—Wood	lbs.	8,877,850	17,755	11	2			
						39,410	9	3
4TH.—WATER—(*including Wages and Stores*)			....			2,427	15	1
5TH.—OIL, TALLOW, AND OTHER STORES—(*expended on Engines in work*)			....			1,706	14	5
6TH.—MAINTENANCE AND RENEWALS OF LOCOMOTIVE ENGINES AND MACHINERY—								
(1.)—Wages			11,463	3	4			
(2.)—Overtime allowances			426	2	10			
(3.)—Materials			9,309	5	10			
						21,198	12	0
7TH.—PAYMENTS TO OTHER LINES—								
(1.)—Hire of Locomotives			....					
8TH.—UNCLASSIFIED EXPENDITURE—								
Loss on Stores, etc.			....					
Total...			....			92,181	5	1
Deduct sum chargeable to fund...			....			....		
Total...			....			92,181	5	1

ABSTRACT C.

Carriage and Waggon Expenses for June 1872.

				Rs.	A.	P.	Rs.	A.	P.
1ST.—GENERAL SUPERINTENDENCE—									
(1.)—Salaries of Superintendents and Assistants ...				*600	11	3			
(2.)—Allowances, including travelling				26	5	7			
(3.)—Subordinate Superintendents				*811	8	4			
(4.)—Allowances of do., including travelling ...				184	1	7			
(5.)—Overtime allowances				74	7	11			
(6.)—Office expenses				524	8	5			
							2,221	11	1
2ND.—REPAIRS AND RENEWALS OF VEHICLES AND MACHINERY—									
Coaching Vehicles—(1.)—Wages ...	1,867	14	0						
(2.)—Overtime ...	16	3	10						
(3.)—Materials ...	1,889	13	4						
				3,773	15	2			
Goods Vehicles— (1.)—Wages ...	2,773	0	1						
(2.)—Overtime ...	18	3	6						
(3.)—Materials ...	5,108	4	9						
				7,899	8	4			
							11,673	7	6
3RD.—CLEANING CARRIAGES AND WAGGONS, AND OILING—									
(1.)—Labour, including wages of Oilers, Carriage Cleaners, and Examiners				1,032	15	1			
(2.)—Stores, including oil, grease, and other stores for consumption on running vehicles				3,847	12	10			
							4,880	11	11
4TH.—UNCLASSIFIED EXPENDITURE—									
Loss on Stores, etc.				....			....		
Total...				....			18,775	14	6
Deduct sum chargeable to fund...				....			....		
Total...				....			18,775	14	6

* Includes Home Payments, Rupees 213-7-7.

(Signed) W. B. WRIGHT,
Locomotive Superintendent.

31st July 1872.

ABSTRACT D.

Traffic Expenses for June 1872.

		RS. A. P.	RS. A. P.
1ST.—SALARIES, WAGES, ETC.—			
(*a*.)—*General Superintendence*—			
(1.)—Traffic Manager, Assistant do., District Superintendents, and Traffic Canvassers	*6,235 4 8		
(2.)—Office Establishment	2,283 15 1		
(3.)—Travelling allowances	*1,917 9 2		
(4.)—Contingencies	1,381 1 6		
		11,817 14 5	
(*b*.)—*Station Staff*—			
(1.)—Station Masters, Clerks, Porters, Pointsmen, Gatekeepers of level crossings, Signalmen, Station Servants, etc. ...	....	19,548 14 5	
(*c*.)—*Train Staff*—			
(1.)—Guards and Assistant Guards.	4,753 13 4		
(2.)—Overtime allowances... ...	....		
		4,753 13 4	
			36,120 10 2
2ND.—FUEL, LIGHTING, WATER, AND GENERAL STORES—			
(1.)—Fires, lights, water, and general stores for carriages, stations, offices, etc.		3,010 10 0	
(2.)—Waggon covers, ropes, etc.		3,344 11 5	
(3.)—Office and Station fittings and furniture ...		55 8 10	
			6,410 14 3
3RD.—CLOTHING		....	98 6 0
4TH.—PRINTING, STATIONERY, AND TICKETS		....	3,542 1 8
5TH.—CHARGES FOR DELIVERY AND COLLECTION OF GOODS, ETC ...		....	....
6TH.—MISCELLANEOUS EXPENSES		....	....
7TH.—PAYMENTS TO OTHER LINES—			
(1.)—Hire of vehicles		....	
(2.)—Mileage of foreign stock...		....	
(3.)—Expenses at joint stations		....	
			....
8TH.—UNCLASSIFIED EXPENDITURE—			
Loss on Stores, etc.		....	....
Total...		....	46,172 0 1
Deduct sum chargeable to fund...		....	....
Total...		....	46,172 0 1

* Includes Home Payments, Rupees 2,438-3-0.

MADRAS,
31st July 1872.

(Signed) L. S. MOSS,
Deputy Traffic Manager.

ABSTRACT E.

General Charges for June 1872.

	RS. A. P.	RS. A. P.
1ST.—HOME EXPENDITURE—		
(1.)—Directors and Secretary or Managing Director...	} 27,837 2 11	
(2.)—Auditors and Accountants		
(3.)—Consulting Engineer and Inspecting Officers' fees and travelling allowances	818 2 11	
(4.)—Office expenses	....	
		28,655 5 10

General Charges, etc.—(Concluded.)

2ND.—SALARIES OF INDIAN MANAGEMENT, INCLUDING OFFICES—	Salaries.	Travelling Allowances.	Contingencies.	RS. A. P.	RS. A. P.
	RS. A. P.	RS. A. P.			
(1.)—Agent's Office.	3,358 2 11	1 14 0	...	3,360 0 11	
(2.)—Auditor's do.	4,538 2 3	39 0 0	...	4,577 2 3	
(3.)—Account's do.	1,038 15 3	......	...	1,038 15 3	
(4.)—Paymaster's (Cashier's) Office.	2,935 12 2	184 15 0	...	3,120 11 2	
(5.)—Store Dept. ...	2,632 15 8	62 12 0	...	2,695 11 8	
(6.)—Medical do. ...	1,834 10 8	114 10 0	...	1,949 4 8	
(7.)—Rents of buildings and lands...				294 4 7	
(8.)—Contingencies, including furniture and fittings ...				636 9 8	
(9.)—Stationery				181 6 10	
(10.)—Medicine				....	17,854 3 0
3RD.—POLICE—					
(1.)—Supervision				230 0 0	
(2.)—Constables				1,385 12 2	
(3.)—Contingencies				224 2 8	1,839 14 10
4TH.—ADVERTISING—(*all Advertisements of all departments.*)				....	85 8 0
5TH.—ELECTRIC TELEGRAPH—					
(1.)—Salaries of Superintendents and Assistants				714 8 9	
(2.)—Signallers				2,252 6 7	
(3.)—Travelling expenses				181 8 0	
(4.)—Office expenses, contingencies, etc.				275 6 0	
(5.)—Maintenance, wages, and stores				1,776 0 10	5,199 14 2
6TH.—CLEARING ACCOUNTS WITH OTHER LINES				....	
7TH.—UNCLASSIFIED EXPENDITURE—					
Loss on Stores, etc.				....	
Total...				....	53,634 13 10
Deduct sum chargeable to fund...				....	....
Total ..				....	53,634 13 10

ABSTRACT G.

Special and Miscellaneous Expenditure for June 1872.

		RS. A. P.	RS. A. P.
1ST.—LAW CHARGES		....	498 2 5
2ND.—COMPENSATION—			
(1.)—For goods lost or damaged ... {From Revenue Fund ...	......		
{From Fire Insurance do.	97 8 0	97 8 0	
(2.)—For personal injury		....	
(3.)—For other claims		....	97 8 0
3RD.—RATES AND TAXES—(*including Municipal Water-rates*)		....	*16,891 5 0
4TH.—CONTRIBUTIONS TO SPECIAL FUNDS—			
(1.)—Fire Insurance Fund		....	20,727 4 4
Total...		....	38,214 3 9
Deduct sum chargeable to Fire Insurance Fund...		....	97 8 0
Total...		....	38,116 11 9

	RS. A. P.
* Income-tax on Net Traffic Earnings for the year ending 31st March 1872, first instalment ...	16,591 5 0
Assessment on buildings at Bangalore	300 0 0
	16,891 5 0

(Signed) J. CRAMP,
Chief Accountant.

23rd August 1872.

ABSTRACT II.

Coaching Traffic for June 1872.

	First Class.		Second Class.		Third Class.		Fourth (Cooly) Class.		Total.	
Mileage Fares... {Day ... / Night ...	RS. A. P. 0 1 6 / 0 1 10		RS. A. P. 0 0 5 / 0 1 0		RS. A. P. 0 0 3 / 0 0 4		RS. A. P. 0 0 2 /			
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
1ST.—PASSENGERS—		RS. A. P.		RS. A. P.		RS. A. P.		RS. A. P.		RS. A. P.
Single journeys ...	486	9,255 6 0	7,961	11,963 0 0	152,768	1,28,259 5 0	26,711	10,388 1 0	187,926	1,59,865 12 0
Excess fares ...	...	34 4 0	...	35 9 0	...	322 6 0	...	....	...	392 3 0
Return journeys ...	278	2,589 12 0	232	281 8 0	6,412	1,661 0 7	...	....	6,922	4,532 4 7
Troops and Police.	2	65 4 0	30	190 10 0	1,366	3,390 14 0	...	....	1,398	3,646 12 0
Total...	766	11,944 10 0	8,223	12,470 11 0	160,546	1,33,633 9 7	26,711	10,388 1 0	196,246	1,68,436 15 7
Season Tickets...	5	105 0 0	6	24 11 0	...	....	...	....	11	129 11 0
2ND.—PASSENGERS' LUGGAGE ...	...	...	...	...	...	...	...	...	Ton Miles. 9,115	2,694 0 0
3RD.—MILITARY BAGGAGE ...	...	...	...	...	...	...	...	...	1,564	449 11 0
4TH.—CARRIAGES, HORSES, DOGS, ETC.—									No.	
(1.)—Carriages ...	...	...	...	...	...	...	...	...	69	2,014 0 0
(2.)—Horses ...	...	...	...	...	...	...	...	...	222	4,020 8 0
(3.)—Dogs ...	...	...	...	...	...	...	...	...	262	391 12 0
										6,426 4 0
5TH.—MILITARY CARRIAGES, HORSES, ETC.—										
(1.)—Carriages ...	...	...	...	...	...	...	...	...	...	....
(2.)—Horses ...	...	...	...	...	...	...	...	...	10	210 13 0
(3.)—Dogs ...	...	...	...	...	...	...	...	...	...	....
										210 13 0
6TH.—PARCELS ...	...	...	...	...	...	...	...	...	5,654	8,132 12 0
7TH.—SPECIAL TRAINS ...	...	...	...	...	...	...	...	...	Train Miles. 383	2,171 1 0
8TH.—POST OFFICE.										
(1.)—Haulage and hire of Post Office Vehicles	...	...	{Number of Vehicles ... / Mileage of do.		...	...	...	...	...	....
(2.)—Special Trains	...	...	...	...	...	...	...	...	...	....
(3.)—Parcels ...	...	...	...	...	...	...	...	...	...	587 6 2
										587 6 2
								Total ...	...	1,89,238 9 9
								Less outstandings irrecoverable ...	...	....
								Total ...	...	1,89,238 9 9

ABSTRACT I.

Goods Traffic for June 1872.

—	Rate per Ton per Mile.	Ton Miles.	Amount.
1ST.—MERCHANDIZE, GENERAL—			RS. A. P.
1st Class ...	12 Pies.	1,597,204	87,453 13 3
2nd ,, ...	14 ,,	675,518	50,075 10 7
3rd ,, ...	18 ,,	391,208	35,786 0 5
4th ,, ...	24 ,,	244,091	33,524 12 7
5th ,, ...	36 ,,	168,715	31,852 9 0
Special ,, ...	8 ,,	2,202,072	89,831 2 9
		5,278,808	3,28,524 0 7
2ND.—MILITARY STORES ...	...	52,522	4,749 5 0
3RD.—RAILWAY MATERIALS FOR CONSTRUCTION ...	...	34,721	941 9 0
4TH.—MINERALS—			
(1.)—For the Public ...	...	...	....
(2.)—For the Company (construction only) ...	...	...	....
		...	....
5TH.—LIVE STOCK—			
(1.)—Horses ...	...	...	....
(2.)—Cattle ...	...	3,417	321 12 0
(3.)—Sheep ...	...	488	89 12 0
		3,905	411 8 0
6TH.—MILITARY LIVE STOCK—			
(1.)—Horses ...	...	...	....
(2.)—Cattle ...	...	...	....
(3.)—Sheep ...	...	...	....
		...	....
7TH.—RENTS AND DEMURRAGE, WHARFAGE, STORAGE, ETC.	...	...	1,156 8 0
8TH.—INTEREST ON OUTSTANDING BILLS ...	...	...	....
Total...	...	...	3,35,782 14 7
Less outstandings irrecoverable...	...	...	....
Total...	...	...	3,35,782 14 7

(Signed) F. O. SHERMAN,
For *Chief Auditor.*

ABSTRACT K.

Sundries for June 1872.

	RS. A. P.
Interest on Revenue balances deposited with Government ...	14,613 3 6
Hire of Locomotives ...	1,026 6 5
Hire of Vehicles ...	....
Mileage of Vehicles and Sheets over foreign lines ...	2,076 15 5
Use of Stations jointly occupied ...	4,434 6 8

Sundries for June 1872.—(Concluded.)

				RS.	A.	P.
Clearing accounts with other lines ...				....		
Tolls on Bridges...				....		
Rents of Dwelling-houses ...				4,991	0	2
Do. of Refreshment-rooms ...				384	0	9
Fees on share transfers, etc. ...				26,973	10	11
Sale of unclaimed and damaged goods...				....		
Sale of Revenue stores.						
1. Maintenance ...	326	5	0			
2. Locomotive ...	213	15	5			
3. Carriage and waggon ...	......					
4. Traffic ...	310	5	9			
5. General ...	83	6	4			
				934	0	6
Total...				55,433	12	4
Electric Telegraph Earnings ...				1,686	7	10

(Signed) F. O. SHERMAN,
For Chief Auditor.

Fire Insurance Fund.

	RS.	A.	P.	RS.	A.	P.		RS.	A.	P.
To amount paid for loss by fire as per Revenue Account as under—				97	8	0	By Balance in hand on 31st December 1871	3,08,440	9	4
,, Amount paid on account of Tents burnt	91	0	0				Interest on Government Paper less debits for commission, etc.	8,127	3	10
,, Amount paid on account of package of cigars burnt ...	6	8	0				Contribution for half-year as per Abstract G. ...	20,727	4	4
,, Balance in hand on 30th June 1872 ...				3,37,197	9	6				
Govt. paper of $4\frac{1}{4}$ per cent. loan for Rs. 2,95,800.	3,15,326	1	11							
Cash...	21,871	7	7							
Total...				3,37,295	1	6	Total...	3,37,295	1	6

(Signed) J. CRAMP,
Chief Accountant.

No. 198. ORDER THEREON, 13th September 1872, No. 2,179.

RAILWAY, No. 35.

ORDERED that the Revenue Account received with this letter be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 199. (DOCKET No. 2,180, dated 13th September 1872.)

COPY of the above forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 200. Read the following paper :—

No. 344.

Statement showing the sums received and disbursed at this Presidency on account of the Madras Irrigation and Canal Company during the month of July 1872.

—	RECEIPTS.		DISBURSEMENTS.	
	Capital Account.	Revenue Account.	Capital Account.	Revenue Account.
Bank of Madras. Nil.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Collector of Kurnool.				
Tax for water supplied by the Irrigation and Canal Company realized in July 1872	....	1,764 6 3	....	....
Amount received in do. on account of assessment of land made over to the Company	....	9 8 5	....	....
Payments from the commencement, namely, 1st October 1859 to 30th June 1872, on Capital Account ...	....	....	93,58,307 0 5	....
Do do. to do. on Revenue Account	....	....	....	1,22,455 3 5
Receipts from do., namely, 1st May 1865 to do. on Capital Account	1,68,417 5 9	....	....	....
Do. do., namely, May 1865 to do. on Revenue Account ...	....	73,271 8 4	....	....
Grand Total of Receipts and Disbursements up to 31st July 1872	1,68,417 5 9	75,045 7 0	93,58,307 0 5	1,22,455 3 5

FORT ST. GEORGE,
ACCOUNTANT-GENERAL'S OFFICE,
4th September 1872.

(Signed) R. TAYLOR,
Officiating Accountant-General.

FORWARDED to the Secretary to Government, Public Works Department, Fort St. George.

Vide letter from Financial Secretary to the Government of India, dated 24th June 1869, No. 1,375

No. 201. ORDER THEREON, 13th September 1872, No. 2,181.

IRRIGATION, No. 11.

ORDERED that the foregoing statement be communicated to the Chief Engineer for Irrigation and that the following letter be despatched.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 202. From the Secretary to the Government of Fort St. George, Public Works Department, to the Under Secretary of State for India, dated 13th September 1872, No. 2,182.

IRRIGATION, No. 12.

SIR,—I am directed by the Right Honourable the Governor in Council to forward the accompanying statement which has been furnished by the Accountant-General of this Presidency showing the sums received and disbursed in India on account of the Madras Irrigation and Canal Company for the month of July 1872. The aggregate amount expended* up to the 31st July was Rupees 94,80,762-3-10.

	RS.	A.	P.
* Capital Account... ...	93,58,307	0	5
Revenue Account ...	1,22,455	3	5

No. 203. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 26th August 1872, No. 1,150:—

I HAVE the honour to inform you that the sum of Rupees 1,213, sanctioned in G. O. No. 394 of 9th February 1872, for repairing the Cuddapah Jail drain was not paid during the past official year, owing to the sanction not having been, by an oversight, communicated to Cuddapah Range in time. This omission could not have occurred had the work appeared, as it should, in the statement of savings and demands submitted from the Range Office.

2. I therefore request that Rupees 1,200 may be sanctioned to adjust the payment for the work in question during the current official year. If funds are not available from "Reserve," the amount can be met by transfer from the provision of Rupees 15,000 for the Taluq Cutcherry at Jummulmudgoo, Item No. 8, in the current year's Provincial Budget.

No. 204. ORDER THEREON, 13th September 1872, No. 2,183.

ACCOUNT, No. 20.

THE Superintending Engineer of the 3rd Division will report the name of the Range Officer answerable for the omission to pay the sum of Rupees 1,213 alluded to in the foregoing letter, and account for that Officer not having been supplied with a copy of G. O. No. 394 of 9th February 1872.

2. His Excellency the Governor in Council directs the immediate adjustment of the claim by the transfer proposed; and Major Vertue will report how it was that a work reported as completed in December last could have remained unpaid for up to the present time, as any such method of carrying on the work of a range must be very faulty and require looking into by the Superintending Engineer.

(Signed) G. W. WALKER, Colonel R.E.,
Secretary to Government.

No. 205. Read the following Circular from the Government of India, Public Works Department, (Account—General,) dated Simla, 24th August 1872, No. 43 :—

Read—

Public Works Department Circular No. 8 R. of 1872.

Read also—

Extract, paragraph 2, *from a Resolution passed in the Financial Department,—No.* 1,321, *dated the* 19*th July* 1872.

PARAGRAPH 2. His Excellency in Council is pleased to resolve that the capital value of all permanent annual payments to or from the Government shall, ordinarily for the present, be taken to be the amount which, invested in four per cent. Government securities at the market rate of the day, will produce interest equal to the payment. For example, four per cent. paper being worth Rupees 101-8-0 per 100 Rupees, the capital value of a permanent annual payment of Rupees 25 will be Rupees 634-6-0, because that sum would buy four per cent. securities amounting to Rs. 625.

RESOLUTION.—The Governor-General in Council is pleased to rule that the orders passed in the above-quoted extract shall in future be followed in arriving at the capitalization of assessment consequent on the taking up of land for Loan Projects in lieu of the orders previously issued in Public Works Department Circular No. 8 Railway of 1872.

Governments of Madras and Bombay (both General and Railway Branches) and to the Government of Bengal, North Western Provinces, and the Punjab.
Chief Commissioners of Central Provinces, Oudh, British Burmah, and Mysore.
Resident at Hyderabad.
Agents to the Governor-General, Central India and Rajpootana.
Superintendent, Port Blair and Nicobars, and Chief Commissioner of the Andaman and Nicobar Islands.
Consulting Engineers for Railways, Calcutta, Lahore, and Lucknow.
Officiating Chief Engineer, Punjab Northern (State) Railway.
Engineer-in-Chief, Indus Valley (State) Railway.
Offg. Superintending Engineer, Northern Bengal (State) Railway.
Superintending Engineer, Agra District, Rajpootana (State) Railway.
Superintending Engineer, Delhi District, Rajpootana (State) Railway.
Superintending Engineer, Holkar (State) Railway.
Superintending Engineer, Neemuch (State) Railway.
Accountant-General, Public Works Department.
Deputy Controller of Accounts, Punjab Northern (State) Railway.
Deputy Controller of Accounts, Indus Valley (State) Railway.
Deputy Controller of Accounts, Rajpootana (State) Railway.
Deputy Controller of Accounts, Holkar and Neemuch (State) Railway.

ORDER.—Ordered that the foregoing be communicated to the Local Governments and Officers marginally noted for information and guidance.

(Signed) P. O'CONNELL, Lieut.-Colonel, R.E.,
Offg. Deputy Secy. to the Govt. of India.

No. 206. ORDER THEREON, 14th September 1872, No. 2,184.

ACCOUNT, No. 21.

COMMUNICATED to the Consulting Engineer for Railways, the Chief Engineer for Irrigation, and the Superintending Engineers for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 207. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 29th August 1872, No. 123 :—

THE Principal of the Civil Engineering College having informed me that no student who has passed the full test for an Overseer is available to fill up vacancies in my division, I have the honour to report that I have transferred Local Fund Range Maistry N. Manickavasagum Pillay (whose entertainment as an Overseer was authorized in G. O. No. 3,105 of 24th October 1863,) and appointed him from 1st August 1872 to act as Taluq Overseer of Sattiamungalum Taluq in place of Mr. A. Gaynor, who has obtained sick leave up to 16th February 1873. The approval of the Local Fund Board will be obtained for the transfer of the Maistry from Local Fund Establishment.

2. Manickavasagum Pillay has not passed the Overseer's test; but having been in Government employ in the Public Works Department for many years, and being strongly recommended by the Range Officer under whom he has for several years served as a thoroughly good workman and upright man, I venture to hope his case will be treated as a special one, and that he may be exempted from passing the usual test, so that, after a probation of six months, I may, with the sanction of Government, be at liberty to confirm him in his appointment.

No. 208. ORDER THEREON, 14th September 1872, No. 2,185.

ESTABLISHMENT, No. 13.

THE Superintending Engineer of the 7th Division is authorized to employ Manickavasagum Pillay as proposed to fill a temporary vacancy.

2. He is referred to G. O. No. 2,165 of 12th September, for the terms on which alone Acting Overseers can in future be confirmed in their appointments.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 209. Read the following letter from the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 30th August 1872, No. 1,201 :—

1, Raising new platform at Salt Cotaurs, etc., estimate Rupees 61,300. Commenced 1864, completed 1872.

1, Road from Wandiwash to Polur, estimate Rupees 44,500. Commenced 1867, completed 1872.

IN forwarding the accompanying Completion Reports noted in the margin, I have the honour to bring to the notice of Government that the deviations from the sub heads of estimate, which in respect of the former work are of an extensive nature, were carried out without the sanction of proper authority; and, on addressing the Superintending Engineer on the subject, I have been informed that the deviations have not received the sanction of his office, and that those shown in the certificate for the construction of a road from Wandiwash to Polur appear reasonable under the circumstances. Both works were commenced

G. O., No. 2,049, dated 9th August 1871.

long prior to the issue of the order requiring the submission by Range Officers to this office of certificates of deviations from sanctioned estimates ; but it does not appear that the mere absence at the time of a specific order on the subject implied that Range Officers were at liberty to allow variations from the sub-heads so long as the total cost of construction did not fall short, or much short of the estimated outlay. I have, therefore, considered it necessary to solicit the orders of Government on the disposal of the two documents submitted with this letter.

No. 210. ORDER THEREON, 14th September 1872, No. 2,186.

ACCOUNT, No. 22.

THE deviations from sanction in the bill for the road from Wandiwash to Polur are either amply accounted for in the column of remarks or such as a Range Officer of Lieutenant Bevan's standing and efficiency is quite competent to carry out on his own responsibility.

2. It is otherwise with the other bill submitted for orders by the Controller, and the Superintending Engineer of the 4th Division will report in full detail every circumstance connected with the work of raising a new platform at the Madras Salt Cotaurs. The expenditure of each year, cause of long delay in completion, and reason of excess of work in each of nine items counterbalancing a saving of Rupees 7,636 in the item of earthwork, should be stated, as well as the names of the Range Officers responsible for the irregularities.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 211. Read the following :—

No. 181.

Note by the Acting Chief Engineer for Irrigation.

IN G. O., No. 1,802, dated 30th July 1872, Mr. Parkes' report on the cement testing machine by M. V. deMichele has been referred to me for such remarks as I may wish to offer, with reference to G. O., No. 554, dated 25th February 1871.

2. Mr. Parkes, Civil Engineer, specially notes four objections to deMichele's machine ; on a reference, however, to a description of the machine in the Engineering Journal of 23rd December 1870, two of these objections disappear, namely. Nos. 3 and 4, for when the block breaks the record of the strain is not lost by the fall of the weight, as it is said to be, but it is indicated by a pointer. By arrangements specially made the weight falls through so small a space that the jar must be very inconsiderable.

3. I have not been able to obtain a plan or description of Mr. Adie's machine which Mr. Parkes recommends, but from what can be gathered from Mr. Parkes' description, certain advantages in the latter are sacrificed for the purpose of obtaining compactness in the former, which does not appear to have come generally into use, and it is supposed that manufacturers would not be satisfied at results obtained from a machine not generally recognised in England ; the machine, however, would probably never be required to test Portland cement.

4. The cost of neither machine is mentioned. I would suggest that it should be left to Mr. Parkes, Civil Engineer, to select the machine he deems most simple, useful, and reliable after he has seen Mr. M. V. deMichele's machine at work, and that only one instead of two machines should be supplied.

5. Mr. M. V. de Michele's machine will indicate the adhesive or tensile strength of the cement only, and not its resistance to crushing; if Adie's machine indicates the latter also it should be preferred.

OOTACAMUND, (Signed) R. F. OAKES, Major, R.E.,
3rd September 1872. *Acting Chief Engineer for Irrigation.*

No. 212. ORDER THEREON, 14th September 1872, No. 2,187.

ACCOUNT, No. 23.

ORDERED that the Home Government be addressed on the subject.

(Signed) G. W. WALKER, Colonol, R.E.,
Secretary to Government.

No. 213. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 29th August 1872, No. 2,009 :—

WITH reference to paragraph 5 of G. O. of the 14th August 1872, No. 1,935, I have the honour to report that the views of Government as expressed in the order alluded to relative to the practice which prevailed in some districts of issuing cheques in the last month of the official year for works stated to be completed; but the retention of these cheques, until the works were really completed and examined, were duly communicated to all Range Officers for their guidance, and I am glad to observe that this pernicious practice does not prevail in any of the districts in this division.

No. 214. ORDER THEREON, 14th September 1872, No. 2,188.

ACCOUNT, No. 24.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 215. Read the following letter from the Superintending Engineer 5th Division, to the Secretary to Government, Public Works Department, dated Salem, 5th September 1872, No. 112 :—

WITH reference to the last paragraph of the Order of Government of the 14th August 1872, No. 1,935, I have the honour to state that on the receipt of the Order of the 4th January, Range Officers were directed to at once put a stop to the practice of issuing and retaining cheques if it existed. The attention of the Range Officers was again more particularly drawn to the same subject on the receipt of the Order of Government of the 11th July, No. 1,670. The practice even to the small extent that it existed never had the sanction of the Superintending Engineer, and is not likely to be again adopted.

No. 216. ORDER THEREON, 14th September 1872, No. 2,189.

ACCOUNT, No. 25.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 217. Read the following Proceedings of the Government of India in the Public Works Department, (Establishment—General,) dated Fort William, 8th May 1872, No. 635-E. G. :—

Reorganization of the Public Works Department in Madras.

Read again :—

Letter No. 2,190 of the 4th August 1863, from the Government of Madras, and enclosures.

Public Works Department letter No. 1,838-G. G. of the 17th August 1863, to do.

Letter No. 2,512 of the 31st August 1863, from the Government of Madras.

Public Works Department letter No. 2,337-G. G. of the 25th September 1863, to the Government of Madras.

Letter No. 2,631-245 of the 12th September 1863, from the Government of Madras.

Public Works Department letter No. 5,398 of the 29th December 1863, to the Government of Madras.

Letter No. 3,722-409 of the 16th December 1863, from the Government of Madras.

Despatch from Secretary of State to Government of India, No. 47 of 9th December 1863.

Public Works Department letter 587-E-3,483 of 1st August 1864 to Government of Madras.

Read also :—

Letter No. 2,319 of the 12th September 1870, from the Government of Madras and enclosure.

OBSERVATIONS.—The Government of India approve, on the whole, of the organization recommended by the Government of Madras in its main features and especially with reference to the institution of District Engineers, which they deem most desirable with a view to the efficient direction of the numerous and complicated works which characterize the Madras Presidency, and which have recently received a still greater development in consequence of the establishment of Local Fund Circles.

2. The Governor-General in Council observes that the Government of Madras supposes the arrangement at present in force to be the Superintending Engineer system of the Government of India, but that is not the case. An essential part of that system was left out, namely, the Divisional (or Executive) Engineers between the Range (or Sub-divisional) Officers, and Superintending Engineers, even though as numerous as those of Madras, could not directly control the Sub-divisional Officers, as was pointed out to the Madras Government in 1863-64.

3. In the scheme now sent up this is to some extent remedied by eliminating the Superintending Engineers and appointing District Engineers instead in sufficient numbers to supervise properly the Range Officers. These District Engineers are something intermediate between Superintending and Executive Engineers, being rather what is termed by the Government of India Superintendents of works. Three or four are to have responsibilities equal, or nearly equal, to Superintending Engineers, while others again are to control expenditure which would only equal a small charge for an Executive Engineer. It is proposed to give twelve of these officers the salaries of Superintending Engineers, while not more than three (or four at most) have responsibilities in proportion.

4. Again, the whole scale of salaries for Engineers is slightly altered from what the Government of India has established elsewhere. The alterations have apparently no particular object, and are not, on the whole, in the direction of economy. This will be seen from the following tables.

5. The Government of India's Establishment for the buildings and roads and Irrigation branches gives the following scale :—

		Monthly.
	RS.	RS.
4 Chief Engineers, 1st class	2,500	10,000
4 Do. do., 2nd do.	2,000	8,000
4 Do. do., 3rd do.	1,800	7,200
10 Superintending Engineers, 1st grade	1,600	16,000
10 Do. do., 2nd do.	1,350	13,500
9 Do. do., 3rd do.	1,100	9,900
38 Executive Engineers, 1st grade	950	36,100
50 Do. do., 2nd do.	800	40,000
51 Do. do., 3rd do.	650	33,150
63 Do. do., 4th do.	550	34,650
88 Assistant Engineers, 1st do.	450	39,600
129 Do. do., 2nd do.	350	45,150
38 Do. do., 3rd do.	250	9,500
3 Apprentices	100	300
	Total...	3,03,050
	Average per Engineer...	605

6. The Government of Madras proposes the following :—

	RS.	RS.
1 Chief Engineer	2,500	2,500
1 Consulting Engineer for Irrigation	2,000	2,000
1 Deputy Chief Engineer...	1,500	1,500
4 } 21 { District Engineers	1,500	6,000
3 } 21 { Do. do.	1,350	4,050
5 } 21 { Do. do.	1,100	5,500
7 } 21 { Do. do.	900	6,300
2 } 21 { Do. do.	700	1,400
1 Consulting Architect	1,200	1,200
1 Executive Engineer	700	700
15 Assistant District Engineers	600	9,000
16 Do. do. do.	500	8,000

	RS.	RS.
16 Assistant District Engineers	400	6,400
12 Do. do. do.	250	3,000
Total...		57,550
Average per Engineer...		678

7. But the scale of establishment which would be suitable under the Government of India's organization would be—

	RS.
1 Chief Engineer, 1st class	2,500
1 Do. do., 2nd do.	2,000
2 Superintending Engineers, 1st grade, at Rupees 1,600	3,200
2 Superintending Engineers, 2nd grade, at ,, 1,350	2,700
1 Do. do., 3rd ,, at ,, 1,100	1,100
6 Executive Engineers, 1st grade, at ,, 950	5,700
8 Do. do., 2nd ,, at ,, 800	6,400
9 Do. do., 3rd ,, at ,, 650	5,850
11 Do. do., 4th ,, at ,, 550	6,050
15 Assistant do., 1st ,, at ,, 450	6,750
22 Do. do., 2nd ,, at ,, 350	7,700
7 Do. do., 3rd ,, at ,, 250	1,750
Total ..	51,650
Average per Engineer...	608

8. This is a little beyond the Government of India's average, but replacing one of the second grade Superintending Engineers by the Consulting Architect, and arranging on the Madras scale it comes to—

	RS.
1 Chief Engineer	2,500
1 Consulting Engineer for Irrigation	2,000
1 Deputy Chief Engineer...	1,600
1 } 21 { District Engineer, at Rupees 1,600	1,600
1 } 21 { Do. do., at ,, 1,350	1,350
1 } 21 { Do. do., at ,, 1,100	1,100
6 } 21 { Do. do., at ,, 950	5,700
8 } 21 { Do. do., at ,, 800	6,400
4 } 21 { Do. do., at ,, 650	2,600
1 Consulting Architect	1,200
1 Executive Engineer	650
4 Assistant District Engineers, at Rupees 650	2,600
11 Do. do., do. at ,, 550	6,050
15 Do. do., do. at ,, 450	6,750
22 Do. do., do. at ,, 350	7,700
7 Do. do., do. at ,, 250	1,750
Total...	51,550
Average per Engineer...	606

9. This scale, or something not more expensive, the Government of India considers should be adopted. It gives fair emoluments compared with the other Public Works Establishments in India, and it retains the salaries assigned to the various grades by the Government of India. It is proper and convenient to maintain uniformity in this respect. In fact, it is enjoined by the Secretary of State in his Despatch No. 47 of the 9th December 1863. Any officers who would

be injured by the new scale would, of course, retain their present salaries until otherwise provided for.

10. In sanctioning the establishment graded according to the Government of India's nomenclature, there is nothing to prevent the Government of Madras from superadding the designation it pleases to adopt. The grade sanctioned by the Government of India should be retained for the purpose of general rules and financial arrangements. Those superadded by the Local Government would constitute the designation of the local appointments.

11. The Governor-General in Council in this department observes that the Government of Madras have omitted the two proposed Inspecting officers in view to economy. But this is not necessary. The officers in the above list on Rupees 1,600 and 1,350 Rupees per mensem might be made Inspectors, two of the Assistant District Engineers on Rupees 650 per mensem being brought in as District Engineers for the smaller districts. The Inspecting officers would no doubt be useful for the working up and scrutiny of large projects as well as for inspecting.

12. There is no objection to what the Government of Madras proposes in regard to the scale of salaries for the Upper and Lower Subordinate Establishments except in regard to established grades, which should be maintained.

13. In paragraphs 28 to 31 of the Report of the Commissioners appointed to inquire into and report upon certain matters connected with the working and organization of the Public Works Department in the Madras Presidency, it is implied that the District Engineers should review and have the first audit of the accounts of the Range or Sub-divisional Officers. This the Government of India considers proper, and should be considered as an integral part of the new organization. The District Engineers should complete the accounts of their districts (being aided by the appointment of more efficient Accountants than are at present employed), and send them up for final audit to the Controller at the Presidency. The details of the arrangement should be worked out and submitted for the approval of the Government of India.

14. The above scales of establishment are not absolutely imposed on the Government of Madras, which is at liberty to submit a modified proposal if considered desirable, bearing in mind the indispensable condition that the future charge to the Imperial revenue is not to exceed the present charge, that the Government of India is to have a proportionate benefit of any reduction of expenditure which can be effected, and that the gross expenditure on establishments should, if possible, be restricted to 20 per cent. on the entire Public Works outlay.

15. In conclusion, the Government of India desires to call the attention of the Government of Madras to the question of customary labour, and to state that the expected report on that subject will be awaited.

ORDER.—Ordered that these observations be communicated to the Government of Madras and to the Financial Department for information.

(Signed) C. H. DICKENS, Colonel, R.A.,
Secretary to the Government of India.

No. 218. ORDER THEREON, 14th September 1872, No. 2,190.

ESTABLISHMENT, No. 14.

ORDERED that the Government of India be addressed on the subject.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 219. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 14th September 1872, No. 2,191.

ESTABLISHMENT, No. 15.

SIR,—In acknowledging the receipt of the Proceedings of the Government of India, under date the 8th May, No. 635, containing the observations of the Governor-General in Council on the recommendations submitted in my predecessor's letter of the 12th September 1870 for the reorganization of the Public Works Establishments in this Presidency, I am directed to submit a revised scheme of establishments which has been framed in conformity with the instructions conveyed in the 7th and following paragraphs of the Proceedings in question.

2. This scheme, so far as regards the number and salaries of Engineers, has been framed in strict conformity with the scale prescribed in paragraph 8 of the Proceedings except that the Consulting Architect has been included among the six Executive Engineers of the first class on salaries of Rupees 950 per mensem, provision being made for a personal allowance of Rupees 250 per mensem to the present incumbent.

3. With reference to the remarks in paragraph 11, provision has been made for two inspecting officers on salaries of Rupees 1,600 each, the proposed Deputy Chief Engineer being dispensed with.

4. The aggregate cost of the establishment will be Rupees 21,50,000 against Rupees 21,74,865, the cost of the establishment proposed in Colonel Carpendale's letter of the 12th September last. All the items have been very carefully scrutinized with the view of effecting, if possible, a further reduction, but this has

been found impracticable; and the Governor in Council earnestly hopes that the establishment now proposed will receive the sanction of the Government of India. Compared with the total of grants for the current year, as shown in the margin, it amounts to 21·33 per cent. on the entire Public Works outlay, but it needs only the moderate increase of $6\frac{3}{4}$ lakhs to Imperial grants to bring the cost of establishments within the percentage prescribed by the Governor-General in Council, namely, 20 per cent. on the gross outlay.

	RS.
Local, including Tools and Plant...	46,32,380
Imperial, other than Agricultural.	5,70,000
Do., Agricultural, Ordinary ...	17,91,200
Do., do. Extraordinary ...	8,77,000
Do., Tools and Plant ...	56,200
Total...	79,26,780
Proposed establishments	21,50,000
Grand Total...	100,76,780

5. It is proposed to introduce the new organization on the 1st December next, that being on the whole the most convenient date for carrying out the change with reference to the state of works, especially in the chief irrigation districts. As the new scale of establishments will only be in force for four months of the official year, there is no reason to anticipate that the grant for the current year of Rupees 20,75,890 will be exceeded. The increased scale will doubtless be met by savings spread over the year, which in 1871-72 amounted to Rupees 66,000.

6. With reference to the remark made in paragraph 13 of the Proceedings to the effect that the review, audit, and completion of the accounts of the Range Officers by the District Engineers should be an integral part of the new organization, I am directed to state that such an arrangement has not been contemplated by the Government of Madras; and that the Governor in Council would greatly deprecate any plan which, by imposing upon the District Engineers the responsibility of auditing and completing the accounts of the Range Officers, would interfere with the important object of reserving the former officers exclusively for purposes of supervision. The amount of office work which, under the system in force previous to the reorganization of 1863, devolved upon the District Engineers was one of the main reasons which led to the condemnation of that system. On this point there would seem to be some misconception in regard to the meaning of the remarks made by the Commissioners in paragraphs 28 to 31 of the report of the 5th April 1870. These remarks have no reference to the audit or completion of the accounts; they merely propose a change in the arrangements at present in force for settling the distribution of the expenditure on Public Works and reviewing its results. The Madras Government consider it of great importance that the range should be retained as the executive unit, although the number of ranges has now been reduced so as to admit of these charges being held by officers of the Engineer and Sub-Engineer grades almost exclusively. It is to the greater frequency and thoroughness of the inspection and supervision of works that they look for improvement under the District Engineer system as now proposed. With these remarks, I am directed to request that early orders may be passed on the scheme of establishments submitted herewith.

7. The report on customary labour is now being compiled from the replies of the various officers consulted, and will be laid before the Government of India at an early date.

Statement showing the Financial Results of the proposed reorganization of the Public Works Department.

No.	Items of Charge.	Rate.	Per mensem.	Per annum.	Total per annum.	Grand Total.
	Direction.	RS.	RS	RS.	RS.	
1	Chief Engineer and Secretary to Government (Class I.)	...	2,500	30,000		
	Office Establishment for do.	...	2,533	30,396		
	Do. Contingencies	...	50	600		
1	Chief Engineer, Class II. (Consulting Engineer for Irrigation)	...	2,000	24,000		
2	Superintending Engineers, 1st Grade (Consulting Engineers for Communications and Harbours and for Civil and Military Buildings)...	1,600	3,200	38,400		
	Office Establishments for three Consulting Engineers	...	1,380	16,560		
	Do. Contingencies for do.	20	60	720		
	House-rent for do.	60	180	2,160		
	Travelling allowance for do.	166⅔	500	6,000		
				1,48,836		
2	Superintending Engineers, 2nd Grade (District Engineers)	1,350	2,700	32,400		
1	Superintending Engineer, 3rd Grade (District Engineer)	...	1,100	13,200		
6	Executive Engineers, 1st Grade (five District Engineers and one Consulting Architect) ...	950	5,700	68,400		
8	Executive Engineers, 2nd Grade (District Engineers)	800	6,400	76,800		
5	Executive Engineers, 3rd Grade (District Engineers)	650	3,250	39,000		
	Five first-class District Office Establishments.	463	2,315	27,780		
	Six second do. do. ...	352	2,112	25,344		
	Eight third do. do. ...	317	2,536	30,432		
	Two fourth do. do. ...	...	560	6,720		
	Office Establishment for Consulting Architect.	...	270	3,240		
	Office-rent, where required, for District Engineers	...	400	4,800		
	Travelling allowance for twenty District Engineers	125	2,500	30,000		
	Batta for twenty Office Establishments ...	25	500	6,000		
	Carriage allowance to Consulting Architect, and District Engineer, Bangalore	50	100	1,200		
	Personal allowance to Consulting Architect ...	...	250	3,000		
	Office Contingencies for twenty-one District Engineers and one Consulting Architect ...	20	440	5,280		
	Official Postage...	...	...	10,000		
	House-rent for District Engineer, Presidency, and Consulting Architect	60	120	1,440		
	Pay proper under "Direction"	...	...	40,000		
	Military allowances	...	1,000	12,000		
				4,37,036		
	Total Direction ..	...	...	...	5,85,872	
	Construction.					
1	Executive Engineer, 3rd Grade, for the Presidency	...	650	7,800		
3	Executive Engineers, 3rd Grade (Assistant District Engineers)	650	1,950	23,400		
11	Executive Engineers, 4th Grade (Assistant District Engineers)	550	6,050	72,600		

Statement showing the Financial Results of the proposed reorganization, etc.—(Continued.)

No.	Items of Charge.	Rate.	Per mensem	Per annum.	Total per annum.	Grand Total.
	Construction.—(Concluded.)	RS.	RS.	RS.	RS.	
15	Assistant Engineers, 1st Grade (Assistant District Engineers)	450	6,750	81,000		
22	Assistant Engineers, 2nd Grade (Assistant District Engineers)	350	7,700	92,400		
7	Assistant Engineers, 3rd Grade (Probationers).	250	1,750	21,000		
4	Sub-Engineers, 1st Grade	400	1,600	19,200		
3	Do., 2nd do.	300	900	10,800		
7	Do., 3rd do.	250	1,750	21,000		
15	Supervisors, 1st do.	200	3,000	36,000		
26	Do., 2nd do.	150	3,900	46,800		
40	Overseers, 1st do.	100	4,000	48,000		
60	Do., 2nd do.	80	4,800	57,600		
87	Do., 3rd do.	60	5,220	62,640		
	Petty Establishments	...	...	1,50,000		
2	Mechanical Engineers	...	720	8,640		
				7,58,880		
	Office Establishments.					
	For seven Officers to be employed on special duties	98	686	8,232		
	For seven Officers (Probationers)	36	252	3,024		
	For one Officer at the Presidency	...	442	5,304		
	For twenty-five ordinary first-class ranges...	171	4,275	51,300		
	For twenty-three do. second do. do. ...	136	3,128	37,536		
	For seven do. third do. do. ...	96	672	8,064		
	For nine special ranges at different rates ...	...	2,227	26,724		
	For thirty-four Supervisors to assist Range Officers	39	1,326	15,912		
	For one Sub-Engineer and one Supervisor at the Presidency and for 187 Overseers ...	27	5,103	61,236		
	For one Supervisor at Paumben, special, as at present	...	138	1,656		
	Pay proper	...	...	20,000		
	Military allowances of Officers	...	...	7,500		
	Do. of Subordinates... ...	...	...	30,000		
	Presidency house-rent to Executive Engineer and Executive Subordinates	...	...	1,300		
	Special allowance to the Wynaad Establishment	...	...	4,000		
	Travelling allowance and batta to Office Establishments	...	...	2,15,000		
	Contingencies and official postage 10,900 + 12,000	...	...	22,900		
	Lithographic Department	...	968	11,616		
	Contingent allowance for do.	..	50	600		
	Public Works Store Department	...	870½	10,446		
	Temporary and Survey Establishments ...	...	...	35,000		
	Civil Engineering College	...	...	42,000		
				6,19,350		
	Total Construction...	...	...	...	13,78,230	
	Accounts.					
1	Controller	...	1,500	18,000		
1	Deputy Controller	...	550	6,600		
	Presidency house-rent	...	105	1,260		
	Travelling allowance	...	166⅔	2,000		
	Office Establishment	...	4,390	52,680		

Statement showing the Financial Results of the proposed reorganization, etc.—(Concluded.)

No.	Items of Charge.	Rate.	Per mensem.	Per annum.	Total per annum.	Grand Total.
	Accounts.—(Concluded.)	RS.	RS.	RS.	RS.	
	Office Contingencies	...	50	600		
	Official Postage	...	...	8,000		
					89,140	
	Conservancy.					
	Vide printed Budget	...	...	...	97,677	

Abstract.

	As per Budget for 1872-73.	As per present Statement.	As per last Statement.
	RS.	RS.	RS.
Direction	3,78,281	5,85,800	5,70,072
Construction	* 15,11,026	13,78,200	14,27,964
Accounts	88,910	89,000	80,740
Conservancy	97,677	97,000	96,089
	† 20,75,894	21,50,000	21,74,865

* Includes extra Rupees 300 for East Coast Canal Establishment.
† Passed in round numbers by the Government of India for Rupees 20,75,600.

Read the following letters :—

No. 220. From the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Madura, 26th July 1872. No. 1,907.

I HAVE the honour to submit, for the sanction of Government, a comparative statement and a revised estimate, amounting to Rupees 1,800, for constructing a wall round the cemetery at Anjengo.

1 Revised Estimate of Rupees 1,800.
1 Comparative Statement.

This revised estimate is submitted in lieu of the estimate of Rupees 1,045, sanctioned in G. O., No. 1,805, dated 8th July 1871, as the provisions in the sanctioned estimate (prepared in the 7th Division, Public Works Department,) are found to be insufficient on examination by Mr. Barton, the Chief Engineer of the Travancore Government.

2. The excess in the revised estimate is owing to the increase in the quantities of laterite stone work and chunam plastering, and also to a slight increase of rates for those items, as will be seen by the comparative statement.

3. A sum of Rupees 20-8-0 has been expended towards the service in question during the last official year by the Travancore Chief Engineer, out of the sum of Rupees 1,045 remitted to that gentleman for carrying out the work, and the unexpended balance, namely, Rupees 1,024-8-0, is still available for the purpose.

4. Under these circumstances, I request that the Government will be pleased to allot the balance, namely, Rupees 755, for expenditure during the current official year from the reserve at their disposal under "Civil Buildings, Provincial," *vide* G. O., No. 1,429, dated 8th June 1872.

5. I have recently visited Anjengo and it is difficult to conceive a more melancholy sight than these dilapidated tombs present, when contrasted with the romantic interest that will ever attach to Anjengo. There remains but one grave with an inscription, and that is dated 1726, on a tomb erected to "Mary Walker, wife of Samuel Walker."

6. Away from the cemetery and close to the old fort on its north side, lies a slab, level with the ground with the inscription, "here lyes Deborah, the wife of John Braybourn, Commodo of Anjengo, deceased September 1704." The above are the only two inscriptions that could be pointed out to one.

No. 221. From the same Officer, dated Courtallum, 21st August 1872, No. 2,368.

1 Estimate of Rupees 1,599.

* Forwarded with my letter No. 1,970, dated 26th July 1872.

In reference to your memorandum No. 81, dated 7th instant, calling for a definite explanation as to the nature of the increase in the quantity of the laterite stone work included in the estimate of Rupees 1,800* for constructing a wall round the cemetery at Anjengo, I have the honour to report that, as the documents forwarded with your memorandum above quoted were not on the records of this office, I was not aware at the time of my visiting the cemetery that the question of area to be enclosed had already been discussed and settled in the manner laid down in G. O., Public Works Department, of the 18th November 1867, No. 3,553.

2. With his letter of the 23rd January 1872, No. 312, the Chief Engineer of Travancore forwarded to me a "revised estimate of Rupees 1,599 for constructing a compound wall and a gate to the burial-ground at Anjengo," with the remark that the original estimate "is on examination found to be insufficient."

3. Before submitting this estimate to Government for sanction, I thought it advisable to inspect the locality myself, and I accordingly did so on the 14th March 1872, in company with Executive Engineer Mr. Rundall; I then observed that four small brick pillars had been constructed a few inches above the ground to indicate the four corners of the proposed wall, and as it appeared to me that the space arranged to be enclosed was somewhat confined, and that the foundations of the wall were likely to interfere with some of the graves, I thought it advisable to increase the length of wall by 21 feet and its breadth by 22 feet.

4. It was about this time, as you may recollect, that the Resident of Travancore wrote requesting that this department would make their own arrangements for carrying out British works within the Travancore limits.

5. I accordingly revised Mr. Barton's estimate, not only by giving the additional dimensions to the wall as above noted, but also by providing pilasters at every 10 feet, in order to afford the wall increased stability.

6. Both the original and revised estimates appeared to me defective in this latter respect; for it must be conceded that a wall no less than 344 feet long, 5½ feet high, and 1 foot thick, built on a sandy soil, is scarcely safe without pillars.

7. In the meantime, after further correspondence between the Chief Engineer of Travancore and myself, Mr. Barton kindly consented to carry out the works we required at Anjengo and Tangacherry, and I accordingly forwarded him my revised estimate of Rupees 1,800, with a request that he would be obliging enough to proceed with the work in anticipation of the sanction of Government, with the balance* of Rupees 1,024-8-0 at his disposal.

	RS. A. P.
*Amount sanctioned	1,045 0 0
Amount billed	20 8 0
Balance ...	1,024 8 0

8. I have, however, now written to Mr. Barton to be so kind as to defer taking any further action in this matter until he hears from me again on the subject, and I shall feel obliged, therefore, by your favouring me with definite instructions on this subject.

9. I forward herewith Mr. Barton's revised estimate amounting to Rupees 1,599, or Rupees 554 in excess of the original estimate. As the additional dimensions proposed by me add only one-tenth to its cost, I trust that the cemetery wall may be constructed in the manner suggested by me; for although it is quite true that, with the lesser dimensions, the whole of the tombs are embraced, yet the wall, if so built, cannot but have a mean and parsimonious appearance, and it is clear that, if the wall is to be built at all, it should surely not be constructed in such a manner as, by its skimpiness, to attract attention and invite remark.

No. 222. ORDER THEREON, 16th September 1872, No. 2,192.

CIVIL WORKS, No. 15.

THE revised estimate of Rupees 1,800 recommended for adoption in these letters is sanctioned, and the work should be carried out without further delay in anticipation of provision, in due time, of the balance of Rupees 755.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 223. Read the following letter from the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 26th August 1872, No. 1,148:—

WITH reference to paragraph 4 of G. O., No. 3,150, dated 14th December last, I have the honour to inform you that Mr. Assistant Engineer Hunter in charge of Cuddapah Range reports that he has compromised the case with the contractor of the Pulivendla Taluq Cutcherry by making, in March last, a payment

to him of Rupees 2,020 on account of cost of materials supplied for the construction of the building in question.

2. In making this compromise, Mr. Hunter effected a saving of Rupees 121 on the amount which the Civil Judge of Cuddapah was of opinion should be paid to the contractor.

3. The Court costs in the case amounts to Rupees 325, which sum the contractor laid out, and as the case was being compromised he laid claim for the payment of the above costs, but subsequently agreed to take Rupees 200 on this account.

4. Colonel Moberly refused his sanction to the payment of these costs on the ground that the Order of Government in question "referred only to *bona fide* claims specially noted by the Civil Judge in his diary on the case." The man now threatens to file a suit if he is not paid the Rupees 200.

5. I, therefore, request the sanction of Government to pay this amount, and charge the same to "Contingencies," as the claim seems very fair and equitable, seeing that the man has been driven to take his case into Court and only seeks to recover a portion of the costs.

No. 224. ORDER THEREON, 16th September 1872, No. 2,193.

ACCOUNT, No. 26.

HIS Excellency the Governor in Council sanctions the payment of Rupees 200 to the Contractor of the Pulivendla Taluq Cutcherry, being a portion of the costs incurred by him in connection with the suit which the Government authorized to be compromised in G. O., No. 3,150, dated 14th December 1871.

2. The charge will be adjusted against "Contingencies."

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

No. 225. Read the following letter from the Officiating Quarter Master General, to the Secretary to Government, Public Works Department, dated Ootacamund, 26th August 1872, No. 363-6,601 :—

1 Abstract Estimate for Rupees 2,300 for constructing a platform opposite the rest-house at Ghooty.
1 Specification.
1 Plan.

I HAVE the honour by order of His Excellency the Commander-in-Chief to forward plan and estimate as per margin for a platform for Troops near the Ghooty Railway Station.

2. The plan and estimate have received the approval of the Commander-in-Chief.

3. The documents are forwarded to you direct, as suggested by the Superintending Engineer of the 3rd Division in his letter, No. 1,028, dated 9th instant, also

enclosed. In this letter the Superintending Engineer states that funds for the work are not available under "Minor New Works Military."

No. 226. ORDER THEREON, 17th September 1872, No. 2,194.

MILITARY WORKS, No. 8.

THE Governor in Council sanctions the plan with estimate, amounting to Rupees 2,300, for the construction of a platform for troops near the Ghooty Railway Station, the expense of such accommodation for troops being chargeable to Government according to G. O. No. 3,509 of 13th November 1867; but as funds are not at present available, the execution of the work must be deferred until savings are reported.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 227. Read the following letter from the Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Camp at Salem, 4th September 1872, No. 111 :—

I HAVE the honour to submit, for entry in the Imperial Budget Military for 1873-74, an estimate of Rupees 610, accompanied by plan and specification, for altering the privy at the old Artillery Barracks, Bangalore, now being converted into Apothecary's quarters.

2. The plan and estimate have been approved of by His Excellency the Commander-in-Chief.

No. 228. ORDER THEREON, 17th September 1872, No. 2,195.

ACCOUNT, No. 27.

SANCTIONED, but the estimated outlay being under Rupees 2,500 the work cannot find a place in the Budget and should be brought forward after 1st April next for an appropriation of funds from the Reserve unless Colonel Foord can meanwhile provide them from his Minor New Works allotment.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 229. Read the following paper :—

Statement of Payments made in England on account of Stores and Freight on account of Madras Public Works Ordinary and of Invoices despatched to India during the month of July 1872, *showing the balance of expenditure uninvoiced at the commencement and close of the month.*

ABSTRACT OF PAYMENTS.						ABSTRACT OF INVOICES.			
Date of payment.	To whom paid.	Particulars.	No. and date of Indent.	Amount.	Ship's name.	Date of Invoice.	Ship's name.	Particulars.	Amount.
				£. s. d.					£. s. d.
	Balance of Expenditure uninvoiced on 30th June 1872.							*Balance invoiced but not paid for on 30th June* 1872.	
1872. 8th Jan.	Paymaster General.	Paper from Stationery Office.	No. 908, 15th Dec. 1869.	0 17 2		1871. 22nd Sept.	*St. Lawrence*	Varnish (Livett) ...	6 13 10
	Do. ...	Do. do. ...	Do.	14 18 7			*Do.*	Hides (Oastler) ...	97 15 0
				15 15 9					104 8 10
22nd July	Westwood, Baillie, and Co.	255 Iron Joist Bars Tons 21-6-1-7.	No. 1,037, 15th Dec. 1870.	302 3 6	*St. Lawrence*			Balance of expenditure uninvoiced on 31st July 1872	317 19 3
		Balance invoiced but not paid for on 31st July 1872	......	104 8 10					
			Total...	422 8 1				Total...	422 8 1

INDIA OFFICE,
14*th August* 1872.

(Signed) E. R. CAVE-BROWNE,
Acting Accountant.

No. 230. ORDER THEREON, 17th September 1872, No. 2,196.

ACCOUNT, No. 28.

COMMUNICATED to the Officer in charge of Public Works Stores Department and the Controller of Public Works Accounts.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 231. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 6th September 1872, No. 477:—

WITH reference to Order of Government, No. 238, dated 24th August 1872, I have the honour to report that the Agents of the Madras and Carnatic Railways state that they have no surplus sleepers available for sale.

2. The Agent of the Great Southern of India Railway replied that he has no other stock of sleepers than that which it has been proposed should be transferred to the Hyderabad State Railway.

No. 232. ORDER THEREON, 17th September 1872, No. 2,197.

RAILWAY, No. 36.

ORDERED that the Government of India be informed accordingly.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 233. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 17th September 1872, No. 2,198.

RAILWAY, No. 37.

SIR,—In reply to your letter of the 8th August 1872, No. 1,109, requesting that a return of the surplus sleepers available for sale on the Guaranteed Railways under the control of the Madras Government may be prepared and submitted to the Government of India, I am directed to state that it has been ascertained that there are no sleepers available for sale on the Railways in this Presidency, except those which have been ordered to be transferred to the Hyderabad State Railway.

Read the following papers :—

No. 234. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 23rd August 1872, No. 2,261.

IN G. O., No. 1,279, dated 14th May 1872, authority is granted for the employment of an office establishment, at a monthly cost of Rupees 27, for Supervisor Annathoray Putten at the Presidency, this subordinate having been

transferred to the Chingleput District. I have the honour to request that you will sanction the continuance of the establishment under Mr. Francis, who has been appointed as Taluq Overseer, *vice* Mr. Stephens promoted.

No. 235. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 2,458.

I HAVE the honour to request your sanction for the entertainment of the under-mentioned establishment for Supervisor Hickens transferred from the 1st Division under G. O., No. 1,635, dated 6th July 1872, as also for Supervisor Ramiah removed to this division under G. O., No. 1,947, dated 15th August 1872 :—

For each ... { 1 Writer, at Rupees 25 per mensem.
{ 2 Lascars, at " 7 " " each.

No. 236. ORDER THEREON, 18th September 1872, No. 2,199.

ESTABLISHMENT, No. 16.

THE establishments required for two Supervisors and one Overseer respectively, as detailed in the Superintending Engineer's applications above recorded, are sanctioned from the dates of their taking charge, which will be duly reported to the Controller.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 237. Read the following Endorsement of the Officiating Controller of Public Works Accounts, dated Fort St. George, 22nd August 1872, No. 1,115 :—

From the Superintending Engineer, 4th Division, to the Controller of Public Works Accounts, dated Madras, 19th August 1872, No. 2,182.

One Bill.

IN reply to your Memorandum, No. 115, dated 9th August 1872, I have the honour to observe that G. O., No. 482, dated 17th February 1871, holds Superintending Engineers responsible for long marches "leading to claims for mileage, enhancing the outlay on travelling charges."

2. I see nothing in it that authorizes your calling on me to explain my admitting those charges, though you are empowered to report me to Government if I fail to carry out the principle.

3. In the present case, Government have in Order, No. 1,586, dated 1st July 1872, distinctly ruled that Mr. Smither shall work the formerly existing two ranges as one "by rail." If he had marched through the intervening Zemindary, he would have saved his own pocket with probably considerable waste of time.

4. It is difficult, under these circumstances, to explain the urgent necessity beyond the natural anxiety of an officer in a responsible position to do his duty over an extended tract of country. You have seen from his No. 138, of 5th August 1872, that Mr. Smither has lost by acting in what he (and I) believe to be in accordance with the orders of Government.

Submitted for the orders of Government.

2. In auditing claims to mileage it has been the practice of this office, since the issue of the orders* noted in the margin, to ask for information as to the exceptional circumstances or urgent necessity under which forced marches were made whenever such particulars were not supplied either in the Inspection Report or in the Mileage Certificate on the reverse of the bill. This practice has saved frequent references to Government and has been found to work well. Inattention to the Controller's printed Memorandum, No. 2,580, dated 21st February 1871, (herewith enclosed,) is the usual cause of suspension of audit by this office to claims on account of mileage.

* Nos. 482 and 1,109, of the 17th February and 20th April 1871.

1 Bill (to be returned).
1 Copy of letter from Colonel F. J. Moberly, No. 2,042, dated 10th August 1872.
1 Do. do. to. do., No. 344, dated 13th August 1872.
1 Copy of Controller's Memorandum, No. 2,580, dated 21st February 1871.
1 Controller's Memorandum, No. 115, dated 9th August 1872.

3. In the case of Mr. Smither's, to which Colonel Moberly refers, it will be observed from the accompanying bill that no information is given of the exceptional circumstances under which the marches, for which mileage is claimed, were made; and, as Colonel Moberly questions the right of this office to call for the required information, I am compelled to submit the matter for orders. The orders of Government of the 1st July last, No. 1,586, quoted by the Superintending Engineer do not appear to me to give any authority to this office to pass Mr. Smither's claim to mileage for journeys by rail without information of the grounds on which such journeys may be undertaken.

4. The letter from Mr. Smither's, alluded to in paragraph 4 of Colonel Moberly's letter, has reference to the insufficiency of the authorized rates of mileage and tentage to meet Mr. Smither's travelling expenses. A copy thereof and of the reply of this thereto is herewith forwarded for perusal.

(Signed) D. H. TRAIL, Captain, R. E.,
Offg. Controller of Public Works Accounts.

No. 238. Order thereon, 18th September 1872, No. 2,200.

ESTABLISHMENT, No. 17.

G. O., 20th April 1871, No. 1,109, fully justifies the course adopted by the Controller. It distinctly rules that the exceptional circumstances under which forced marches are made should be satisfactorily explained, and the question of the Controller's right to require such explanation has, therefore, been unnecessarily raised by Colonel Moberly.

2. The Controller is instructed to report whether, in his opinion, the Travelling Allowance Rules admit of allowances being drawn by Mr. Sub-Engineer Smither under both Rules III. and V. under the circumstances detailed in his letter, No. 138, of 5th August, the charge being duly supported by the Superintending Engineer.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 239. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 4th September 1872, No. 470:—

I HAVE the honour to forward, for submission to the Government of India, the Revenue Account of the Great Southern of India Railway for the month of June 1872.

GREAT SOUTHERN OF INDIA RAILWAY.

Statement of Revenue Account for the Month of June 1872.

Expenditure.	Amount. RS. A. P.	Earnings.	Amount. RS. A. P.
To Maintenance of Way and Works (Abstract A.)...	20,185 9 9	By Coaching Traffic (Abstract H.)	39,374 0 1
,, Locomotive Expenses (Abstract B.)	14,715 3 10	,, Goods Traffic (Abstract I.)	24,206 14 6
,, Carriage and Waggon Expenses (Abstract C.) ...	2,775 13 10	,, Electric Telegraph Earnings	362 4 8
,, Traffic Expenses (Abstract D.)	9,023 15 9	,, Sundries (Abstract K.) ...	1,903 4 8
,, General Charges (Abstract E.)	14,470 5 2	,, Balance	329 8 5
,, Special and Miscellaneous Expenditure (Abstract G.)	5,005 0 0		
	66,176 0 4		
,, Balance Net Earnings ...	....		
Total...	66,176 0 4	Total...	66,176 0 4

ABSTRACT A.

Maintenance of Way, Works, and Stations.

	RS. A. P.	RS. A. P.
SALARIES, OFFICE EXPENSES, AND GENERAL SUPERINTENDENCE	....	6,779 8 8
Engineers' salary	5,786 4 0	
Allowances	50 0 0	
Inspectors and Subordinate Superintendents ...	510 0 0	
Allowances of do. do. ...	15 0 0	
Overtime allowances	....	
Office expenses	418 4 8	
MAINTENANCE AND RENEWALS OF PERMANENT WAY ...	....	11,264 15 2
Wages	3,287 8 6	
Material	7,977 6 8	
REPAIRS OF BRIDGES, ETC.—WAGES AND MATERIALS ...	....	58 14 10
Bridges	43 5 6	
Miscellaneous, including earthwork, roads, fencing, etc.	15 9 4	
REPAIRS OF STATIONS AND BUILDINGS—WAGES AND MATERIALS...	....	2,057 5 4
Repairs of buildings, etc.	2,023 3 4	
Do. of staff quarters	34 2 0	

Maintenance of Way, Works, and Stations.—(Concluded.)

	RS. A. P.	RS. A. P.
MAINTENANCE BY CONTRACT	....	....
UNCLASSIFIED EXPENDITURE	....	24 13 9
Plantations	....	
Tools and Plant	24 13 9	
Total...	....	20,185 9 9

ABSTRACT B.

Locomotive Expenses.

	RS. A. P.	RS. A. P.
GENERAL SUPERINTENDENCE...	....	3,520 7 9
Salary of Locomotive Superintendent	695 7 4	
Allowances of do.	....	
Foremen, Fitters, and Subordinate Superintendents ...	1,695 4 3	
Allowances of do. do. ...	461 2 0	
Overtime allowances	14 8 0	
Office expenses	654 2 2	
RUNNING EXPENSES	....	2,476 15 0
Wages of Drivers and Firemen	1,872 15 0	
Overtime and allowances	428 10 0	
Labour connected with fueling and cleaning engines ...	175 6 0	
Contingent and travelling expenses, etc.	....	
FUEL	....	5,896 13 7
Coal ... ... Tons 231 Cwt. 4	3,105 10 4	
Coke	......	
Patent fuel ... ... Tons 67 Cwt. 12	2,635 0 6	
Wood ... ... „ 35 „ 14	156 2 9	
WATER, WAGES, AND STORES	....	223 10 11
OIL, TALLOW, AND MISCELLANEOUS STORES...	....	283 13 1
MAINTENANCE AND RENEWALS OF LOCOMOTIVES AND MACHINERY	....	2,313 7 6
Wages	999 2 7	
Overtime allowances	15 1 0	
Material	1,299 3 11	
PAYMENTS TO OTHER LINES—HIRE OF LOCOMOTIVES ...	....	....
UNCLASSIFIED EXPENDITURE	....	....
Tools and Plant...	....	
Total...	....	14,715 3 10

ABSTRACT C.

Carriage and Waggon Expenses.

	RS. A. P.	RS. A. P.
GENERAL SUPERINTENDENCE	....	584 7 8
Salary of Locomotive Superintendent...	122 11 8	
Allowances of do.	....	
Foremen, Fitters, and Subordinate Superintendents...	274 8 9	
Allowances of do. do. ...	81 6 0	
Overtime allowances	1 11 0	
Office expenses...	104 2 3	

Carriage and Waggon Expenses.—(Concluded.)

		RS. A. P.	RS. A. P.
REPAIRS AND RENEWALS OF VEHICLES		....	1,799 9 6
Coaching Vehicles—Wages	206 14 3		
Overtime allowances.	0 2 11		
Materials ...	561 3 5		
		768 4 7	
Goods Vehicles—Wages	384 14 6		
Overtime allowances.	9 10 5		
Materials	636 12 0		
		1,031 4 11	
CLEANING AND OILING CARRIAGES AND WAGGONS		....	391 12 8
Wages of Carriage Examiners, Oilers, Cleaners, etc.		227 14 0	
Stores, including oil, grease, etc.		163 14 8	
UNCLASSIFIED EXPENDITURE		....	....
Tools and Plant		....	
Total...		....	2,775 13 10

ABSTRACT D.

Traffic Expenses.

		RS. A. P.	RS. A. P.
SALARIES, WAGES, ETC.		....	3,432 13 11
General Superintendence		687 12 6	
Assistant Traffic Manager ...	500 0 0		
Office Establishment	97 0 0		
Travelling allowances	90 0 0		
Contingencies	0 12 6		
Station Staff—including Gatekeepers of level crossings	......	2,273 1 5	
Train Staff	......	472 0 0	
Guards and Assistant Guards ...	472 0 0		
Overtime allowances	......		
GENERAL STORES		....	408 15 3
Miscellaneous stores for stations, carriages, etc. ...		123 9 9	
Waggon covers, ropes, etc.		....	
Office and station furniture and fittings		285 5 6	
CLOTHING		....	....
PRINTING, STATIONERY, AND TICKETS		....	536 2 9
MISCELLANEOUS EXPENSES		....	35 0 0
PAYMENTS TO OTHER LINES		....	4,610 15 10
Hire of vehicles		....	
Mileage of foreign stock		212 9 2	
Expenses at joint stations (Erode Junction) including rent		4,398 6 8	
UNCLASSIFIED EXPENDITURE		....	
Total...		....	9,023 15 9

ABSTRACT E.

General Charges.

	RS. A. P.	RS. A. P.
HOME EXPENDITURE	....	10,600 12 10
Directors, Secretary, etc.	7,429 1 5	
Consulting Engineer, Inspecting Officers' fees and allowances	1,636 5 10	
Office expenses	1,535 5 7	
SALARIES OF INDIAN MANAGEMENT, INCLUDING OFFICES ...	....	3,308 13 5

	Salaries.	Travelling Allowances.	Contingencies.
	RS. A. P.	RS. A. P.	RS. A. P.
Agent's office including Audit and Accounts.	2,293 2 11	21 12 0	12 0 7
Store Dept.	672 15 4	....	... ..
Medical do.	213 9 7	... .	1 5 6
Total...	3,179 11 10	21 12 0	13 6 1

	RS. A. P.	RS. A. P.
	3,214 13 11	
Rents of buildings and land	....	
Contingencies, including furniture and fittings ...	40 7 5	
Stationery	53 8 1	
Medicines	....	
ADVERTISING	....	28 0 0
ELECTRIC TELEGRAPH	....	532 10 11
Signallers	407 8 0	
Office expenses, contingencies, etc.	125 2 11	
Maintenance, wages, and stores	....	
UNCLASSIFIED EXPENDITURE...	....	....
Total...	....	14,470 5 2

ABSTRACT G.

Special and Miscellaneous Expenditure.

	RS. A. P.	RS. A. P.
LAW CHARGES	....	
COMPENSATION	....	5 0 0
For goods lost or damaged	5 0 0	
,, personal injury	....	
,, other claims	....	
RATES AND TAXES	....	
CONTRIBUTION TO SPECIAL FUND (FIRE INSURANCE) ...	....	5,00 0 0 0
Total...	....	5,005 0 0

Abstract H.

Coaching Traffic.

Mileage Fares.	FIRST CLASS.		SECOND CLASS.		THIRD CLASS.		TOTAL.
	18 Pies.		5 Pies.		3 Pies.		
	No.	Amount.	No.	Amount.	No.	Amount.	
Passengers—		RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.
Single journeys ...	127	676 13 0	686	854 9 0	63,075	31,373 1 0	32,904 7 0
Excess fares ...	...	31 11 0	......	29 15 0	...	58 13 0	120 7 0
Return journeys...	...	......	......	....	15,080	3,811 12 0	3,811 12 0
Troops and Police.	...	......	4	7 6 0	393	448 15 0	456 5 0
Total...	127	708 8 0	690	891 14 0	78,548	35,692 9 0	37,292 15 0
Season Tickets...	...	......	.....	....	...	......	....

Total...	79,365	37,292 15 0
Passengers' Luggage ... ... Ton Mileage...	1,271	392 10 0
Carriages, Horses, and Dogs ... ... No....	91	321 14 0
Carriages ... No. 13 Rs. 99 12 0	......	......
Horses ... ... ,, 25 ,, 183 14 0	......	......
Dogs ... ... ,, 53 ,, 38 4 0	......	......
Military Baggage ... ... Ton Mileage...	......	......
Do. Horses, Carriages, and Dogs ... ... No....	......	......
Carriages	......	......
Horses	......	......
Dogs	......	......
Parcels ... ... Ton Mileage...	......	1,357 6 0
Special Trains ... ... Train Miles...	......	......
Post Office Parcels ... ... Ton Mileage...	16	9 3 1
Total ...	......	39,374 0 1
Less outstandings irrecoverable...	......	......
Total...	......	39,374 0 1

Abstract I.

Goods Traffic.

—	Rate per Ton per Mile	Ton Mileage.	Amount.	Total.
			RS. A. P.	RS. A. P.
Merchandize, General	...	...	....	23,730 14 0
1st Class	12 Pies ...	182,032	11,609 1 0	
2nd ,, ...	14 ,, ...	61,877	4,325 6 0	
3rd ,, ...	18 ,, ...	27,233	2,544 9 0	
4th ,, ...	24 ,, ...	4,410	547 6 0	
5th ,, ...	36 ,, ...	3,142	632 0 0	
Special ,, ...	8 ,, ...	120,824	4,072 8 0	

Goods Traffic.—(Concluded.)

—	Rate per Ton per Mile	Ton Mileage.	Amount.	Total.
			RS. A. P.	RS. A. P.
MILITARY STORES...	...	...	....	....
RAILWAY MATERIAL FOR CONSTRUCTION ...	...	18,217	....	453 9 0
MINERALS	...	...	....	....
Public	...	...	....	
Company	...	...	....	
LIVE STOCK	...	...	....	17 7 0
Public	...	140	17 7 0	
Military	...	...	....	
RENTS AND DEMURRAGE, WHARFAGE, STORAGE	...	...	....	5 0 6
INTEREST ON OUTSTANDING BILLS ...	...	...	....	....
Total...	...	...	....	24,206 14 6
Less outstandings irrecoverable...	...	...	....	....
Total...	...	...	....	24,206 14 6

ABSTRACT K.

Sundry Receipts.

	RS. A. P.	RS. A. P.
Interest on Revenue balances deposited with Government.	....	1,049 10 6
Hire of Locomotives	....	....
Do. of Vehicles	....	....
Mileage and Demurrage of Vehicles on Foreign Lines ...	....	....
Rents of Bungalows	....	314 14 8
Sale of unclaimed property	....	2 4 6
Fees on share transfers, etc.	....	391 5 10
Sale of Revenue Stores	....	145 1 2
Maintenance of way and works	103 13 10	
Locomotive expenses	40 10 4	
Carriage and waggon expenses	....	
Traffic expenses	0 9 0	
General charges	....	
Total...	....	1,903 4 8

NEGAPATAM, *17th August* 1872.

(Signed) J. SMITH, *Chief Auditor.*

(Signed) W. S. BETTS, *Agent and Traffic Manager.*

(Signed) C. M. MOBERLY, Captain, *Examiner of Railway Accounts.*

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E., *Consulting Engineer for Railways.*

No. 210. ORDER THEREON, 18th September 1872, No. 2,201.

RAILWAY, No. 38.

ORDERED that this account be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E., *Secretary to Government.*

No. 241. Docket No. 2,202, dated 18th September 1872.

Copy of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 242. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 28th August 1872, No. 444 :—

With reference to the order of Government dated the 26th July 1872, No. 1,788, I have the honour to submit a letter* from the Agent of the Great Southern of India Railway, giving cover to a report from the Chief Engineer upon the junction arrangements at Trichinopoly, showing the manner in which Mr. Logan proposes to work the new station in view of the certain ultimate conversion to the narrow gauge of the existing line between Negapatam and Erode.

* No. 4,659, dated 27th August 1872, with 8 Enclosures :—
1 Report.
1 Estimate.
2 Plans.
4 Sections.

2. Mr. Logan has gone so fully into all the arguments for and against the different proposed sites for the junction that it seems unnecessary for me to do more than express my entire concurrence with him in the opinion that the site marked C is, upon the whole, decidedly the most suitable to the general convenience of the public and of the Railway Company; and that if this site (C) be decided on, the best mode of effecting the junction is by the line marked No. 1, which is shown by Mr. Logan to be as economical as any other mode that has been proposed.

3. I trust that, with the explanation which has now been given, the Government of India will approve of the proposed situation of the junction station and the arrangements connected therewith.

From the Agent of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Negapatam, 27th August 1872, No. 4,659.

In reply to your letter No. 312 of the 3rd instant, I attach hereto copy of a report (No. 2,134, dated the 24th idem) from the Chief Engineer, regarding the proposed junction arrangements at Trichinopoly. The plans therein referred to have been sent to your address by this morning's train.

Copy of letter No. 2,134, dated August 24th, 1872, from Chief Engineer to the Agent.

I have to acknowledge receipt of your No. 2,117 of 6th instant, forwarding Government order, No. 1,788 of the 26th ultimo, on a letter No. 897 from the Government of India regarding the proposed site for the junction station at Trichinopoly.

2. The Government of India remark that (1) I have not explained why the new line should not run into the existing station at Trichinopoly; (2), that if a new junction station is required, they wish it explained why that station should not be placed "on the old line of railway instead of at some distance from it, involving the construction of a new railway and the abandon-

ment of part of the old line, or a duplication of railway lines in a place where two lines are not wanted."

3. In May 1870 I forwarded a survey showing the proposed location of the line; in February 1871 the working plans and surveys of the line as staked out were sent forward with my estimate for the broad gauge; and, finally, in August 1871 the same surveys were again sent on to Government with my estimate for the narrow gauge. More than once, during the period of nearly two years which elapsed between the sanction of the general location of the line and the final sanction by the Government of India (received in March 1872) to our plans and estimates, the Consulting Engineer and his Deputy were at Trichinopoly and discussed the question of the proposed junction station on the ground. With the Acting Consulting Engineer I went over the sites now under reference, and I understood him to concur in my views.

4. I have always considered that the discussions with, and inspections by, the Consulting Engineer were intended to diminish, as far as possible, the necessity for correspondence, and I did not, therefore, consider it necessary to enter into such detail as I would have done, had I been submitting my plans to the judgment of those who were comparatively ignorant of the locality and its requirements.

5. With reference to the question of site for the proposed junction station, when the first portion of this railway was made from Negapatam to Trichinopoly, the terminal station at Trichinopoly was, by order of the Government of Madras, placed at the point E (on the accompanying plans 220, 221, and 222) under the impression, I believe, that any extension towards Erode would be carried straight on, so as to skirt along the high ground on the southern edge of the irrigated lands lying immediately to the south of the river Cauvery.

6. When the best route for the Erode Extension came to be investigated by my predecessor Mr. Carr, he pointed out that it would be injudicious to carry the line along the high ground referred to, the neighbourhood being poorly populated, and only fringed on one side by cultivation; the proper course being to get close to the town and bazaars of Trichinopoly, passing thence through the villages and centres of traffic lying in the irrigated lands parallel and close to the river Cauvery. This view was adopted by the Madras Government, and the extension was constructed accordingly.

7. It had always been a grievance with the merchants and others in Trichinopoly that the small terminal station at E was so far away from them, being about three miles from the centre of the town and one mile and half from the nearest bazaar.

8. In planning the Erode Extension it was, therefore, an object to place a depôt for goods as close to the business-part of the town as possible, and the result was the present station at A.

9. The station at E was intended to be retained for the use of passengers in the cantonment and the upper part of the town; hence the abrupt turn referred to in paragraph 3 of the letter* from the Government of India. It was found, however, E being at so great a distance from all concerned, that no traffic came, and the small station there was abandoned.

* No. 897.

10. The "abrupt turn" or curve referred to by the Government of India is of 16 chains radius, and has been found extremely inconvenient in working, causing delay and considerable wear and tear in rails and tyres; so much so that it was only in the reasonable certainty that the Southern Extension would be carried out, when the curve would be removed; that sanction was not asked to have it taken up and flattened long ago.

11. Again, it has long been felt to be a very great inconvenience to the inhabitants, Civil and Military, of the Cantonment and the upper bazaars that no station nearer than the fort is attainable, and a road-side station has frequently been agitated for to be placed somewhere inside the cantonment; so much was this want felt that the Consulting Engineer in 1869 officially requested that passengers should be taken up and set down in the cantonment; and this has, to a certain extent, been done, but under considerable inconvenience to the public, as no shelter has ever been provided, the expectation being that on the extension of the railway to the south suitable accommodation in the shape of a station would be provided.

12. The fort station (existing) on the one hand and the small station at E (abandoned) on the other, being both inconveniently distant from the cantonment and upper bazaars, I had to consider (1) the place at B, mentioned in paragraph 4 of the letter from the Government of India; (2), the spot marked G; and (3), the site marked C proposed in my plans and estimates.

13. A glance at the accompanying plans and sections will show that a station at B would be extremely expensive and inconvenient in the acquiring of land, in construction, and in maintenance and working. The ground is covered with house-property; the levels are such that a great quantity of filling would be requisite, the land falling away on both sides of the centre line of railway. The choice of site, moreover, is limited on the north by Musselmans' Burying-ground of considerable extent (shown at H on plan No. 222). When the Erode Extension was laid out the Musselman community petitioned Government against the line being taken across the grave-yard, and it was only on its being shown to them that the public interests demanded the sacrifice, coupled with a promise that as little ground as possible would be taken, that the opposition was withdrawn.

14. Towards the south the space available is limited by rising ground, while, even if ample space existed for a good junction station, every ton of Rolling Stock and goods from north to south and *vice versa* would have to be lowered and raised again 15 feet each way, site B being about 15 feet below the level of site C; all traffic on the main line would not only be carried down and up in this way, but a run of about one mile and a quarter more would be entailed than if the station were at C; that is to say, the distance from C to B and thence to D is greater by one mile and a quarter than the distance from C direct to D along line No. 1. Thus, every ton of goods over the main line would be lowered and raised 15 feet, and run one mile and a quarter more than necessary.

The run into the station also being contrary to the direction to be taken by main line trains would involve, with mixed trains as all ours are, the breaking up and reforming of every train at the junction before it could proceed. The amount of extra cost on goods, delay in shunting, and wear and tear in stock, consequent on such an arrangement, it is hardly necessary to enlarge upon.

15. The site B is so obviously central that other things being equal, I believed it to be the best. But I found that the following inconveniences would result from its adoption (1) the objectionably sharp curve in getting round to E would remain; (2), another of a similar character would have to be introduced to leave B for the south (line No. 3); (3), the main line traffic would, as described above with reference to B, have to run into this station G in a direction contrary to that in which it has eventually to proceed; (4) even if the extent of station ground shown at G could, by altering existing gradients, be obtained on a level, the north end of the site, where owing to the levels it would be most economical to build the station, terminates in a falling gradient of 1 in 127, which would, I consider, be the source of much inconvenience, if not of danger, where a great deal of shunting would have to be carried on (5); the site G would necessitate a large amount of filling, from its being on side-lying ground, honey-combed by excavations of the railway ditches and ballast pits; (6), the site and neighbourhood being surrounded by private dwellings, the annoyance to the inhabitants and consequent depreciation of property would be serious.

16. I thus came to the conclusion that the site marked C would best combine the conditions of public convenience and engineering requirements (1). It is quite as central with regard to the cantonment and its bazaars as the site marked G, while it is much closer to the more important points of the station in a Military and defensive point of view, *e.g.*, the European Infantry and Artillery Barracks, the Arsenal, Commissariat Stores, and the Grand Powder Magazine—a matter of no small account in the movement of troops and stores, and may be of vast importance in any time of political trouble.

17. Having satisfied myself that this (C) would be the best site for the junction station, and the next object being its connection with the existing line of railway, it occurred to me to form the junction at the points F and B. This plan would doubtless be slightly the cheapest in first cost; but while leaving untouched the existing objectionable curve between E. and F it would add another equally sharp and expensive in working.

18. I am aware that the curve would not be so injurious on the narrow as it has been on the broad gauge; but sharp curves even on the narrow gauge are unadvisable where the country is comparatively flat and open, and where no heavy expenses are to be avoided by the adoption of such curves so to compensate for the increased wear and tear of permanent-way and rolling stock.

19. The Government of India appears to think (*vide* letter, paragraph 5) that the traffic over this point of the line will be small for many years to come. This is, of course, as yet comparatively a matter of speculation; but I anticipate that the traffic, especially on this portion of the line, will, as a rule, be considerably greater than that which exists now; while at certain seasons of the year very long and heavy passenger-trains will have to be run day and night as has just been the case on the occasion of the great Nagore festival.

20. If the traffic from this source is occasionally very heavy now, it will be doubly so on the opening of the Southern Extension to Madura, one of the holiest cities in Southern India; and its proximity to Ramisserum, another sacred spot, is such that a vast influx of pilgrims from all parts of the country is sure to ensue.

21. The southern country, too, being opened up will undoubtedly cause a heavy increase to the passenger-traffic towards festivals on the now open line, and I leave you to say how inconvenient, if not dangerous, at such seasons it would be to have a cramped up station with bad approaches.

22. Estimating the cost of each of the three lines referred to, marked Nos. 1, 2 and 3 respectively on the accompanying plans Nos. 220, 221, and 222, the following is the result; for details see Appendix A, assuming the lines to be made with new material :—

Line No. 1	... ...	Rupees 75,786
,, ,, 2	... ...	,, 53,248
,, ,, 3	... ...	,, 69,937

But by the construction of line No. 1 one mile and seven-eighths of a mile of permanent-way will be set free from the present railway, and the cost of this may be fairly deducted from No. 1. The rails on the open line weigh 68 lbs. to the lineal yard, and taking the length of rails set free (17-8 mile) at the same cost as the light narrow gauge ones delivered at Trichinopoly, the amount to be deducted from the cost of line No. 1 is Rupees 16,181, and the comparison given above will then be altered thus :—

Line No. 1	... ...	Rupees 58,605
,, ,, 2	... ...	,, 53 248
,, ,, 3	... ...	,, 69,937

Three twelve feet girder spans not taken to account in the above deduction will also be available by the abandonment of this part of the old line.

23. It thus appears that of the two sites (G and C) C would be in reality not only the most suitable to the general convenience of the public and of the Railway Service, but it would practically cost about the same as No. 2, while its advantages in ease and economy of working would be undoubled.

24. The site at C moreover has this further advantage over that at G, that if Government, approving of the former, see cause to order the adoption of line No. 3 now, at any time hereafter line No. 1 can be constructed, especially as the land for it has already been acquired and handed over to the Railway Company.

25. I venture to express the hope that even should Government consider my judgment at fault in this matter, it will be conceded that the subject has, at least, received careful consideration, and that not from a mere narrow professional point of view, but on the broad general principles of what—all things duly weighed—is best suited to the public interests; assuming the site at C adopted, the present station at A will remain the goods, depôt at Trichinopoly for that town and places to the west.

To work into A as a junction station would involve, as I have before pointed out, a fall and rise for all main line traffic of 47 feet; and a run of four and a quarter miles more than if the

junction is worked at C, and in addition the reforming of all through-trains from having to reverse their direction on leaving Trichinopoly for the east and north.

GREAT SOUTHERN OF INDIA RAILWAY.

ENGINEERING DEPARTMENT, SOUTHERN EXTENSION.

Comparative Estimates of proposed Junctions with the open Line.

ABSTRACT.

—	Line No. 1.	Line No. 2.	Line No. 3.
	RS.	RS.	RS.
Construction of Line ...	35,523	25,441	29,317
Ballast and Permanent ...	40,263	27,807	20,960
Extra filling for station ground	......	......	19,660
	75,786	......	......
Deduct cost of permanent-way material available from present Railway by adoption of line No. 1 ...	16,181	......	....
	58,605	53,248	69,937

TRICHINOPOLY,
24th August 1872.

(Signed) DAVID LOGAN,
Chief Engineer.

Comparative Estimates of proposed Junctions with the open Line.

DETAIL.

Estimate.	Line No. 1 shown on the accompanying Plans by a full blue line.		Line No. 2 shown on the accompanying Plans by a full red line.		Line No. 3 shown on the accompanying Plans by a dotted red line.	
	RS.	RS.	RS.	RS.	RS.	RS.
III.—*Construction of Line.*						
1. Earth-work ...	10,575	......	6,497	......	2,654	......
2. Bridge-work—						
1. Minor bridges and culverts ...	579	......	1,181	......	720	......
2. Large bridges...	4,252	......	......	......	9,660	......
3. Level crossings, etc.	6,114	......	6,099	......	3,769	......
4. Fencing ...	14,003	......	11,664	......	12,514	......
		35,523		25,441		29,317
IV.—*Ballast and Permanent-way.*						
1. Ballasting ...	3,230	......	2,235	......	1,683	......
2. Permanent-way ...	37,033	......	23,572	......	19,277	......
		40,263		27,807		20,960
Extra filling for Station Ground B.	......	......	......	......	19,660	19,660
	......	75,786	......	53,248	......	69,937

TRICHINOPOLY,
24th August 1872.

(Signed) DAVID LOGAN,
Chief Engineer.

No. 243. ORDER THEREON, 18th September 1872, No. 2,203.

RAILWAY, No. 39.

ORDERED that these papers be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 244. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,204.

RAILWAY, No. 40.

SIR,—I am directed by His Excellency the Governor in Council to submit for the consideration of the Government of India the accompanying letter from the Consulting Engineer for Railways, giving cover to a report from the Chief Engineer of the Great Southern of India Railway Company, in which that officer explains the grounds upon which the site for the new Railway Station at Trichinopoly was determined; I am to express a hope that the Government of India will accord their sanction to the proposed arrangements which have the full approval of the Consulting Engineer, and appear to His Excellency the Governor in Council to have been thoroughly well considered and to be the best possible under the circumstances described.

No. 245. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 27th August 1872, No. 380 :—

I HAVE the honour to report that a lascar under Taluq Overseer Mr. Taylor was sent from Maracaen Chuttrum in the Puttoocottah Taluq to Puttoocottah, a distance of 25 miles, on the morning of the 12th instant to cash two cheques, one for 500 Rupees for payment of road-coolies, and one for 87 Rupees, the pay of the Overseer and establishment; the man joined the Overseer's camp on the 17th instant at Meenbasel, and stated that he had been robbed of the money while resting at Subbamal Chuttrum, 29 miles from Puttoocottah. The matter was at once put into the hands of the Police by Lieutenant Smart, the Range Officer, and is being investigated, the Superintendent of Police himself being in the neighbourhood.

2. Lieutenant Smart reports that "suspicion strongly attaches to the lascar as being himself the thief," but at present no trace of the money has been discovered. As the Overseer's pay is now nearly two months in arrears, I have the honour to request sanction to the amount of pay lost by him being refunded. Before issue of next month's pay, I trust that the perpetrators of the robbery will have been discovered, and I shall be in a position to report fully on the matter.

No. 246. ORDER THEREON, 18th September 1872, No. 2,205.

ACCOUNT, No. 29.

THE Governor in Council sanctions the refund of pay lost by Mr. Overseer Taylor, and resolves to await a report of the result of the investigation by the Police. Explanation should at the same time be furnished as to why only one man was sent to cash cheques for nearly 600 Rupees.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 247. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 9th September 1872, No. 138 :—

I have the honour to request the sanction of Government to the transfer of Rupees 500 from Repairs, Civil Buildings, Provincial, South Canara District, to the same head in Coimbatore.

No 248. Order thereon, 18th September 1872, No. 2,206.

ACCOUNT, No. 30.

Sanctioned.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 249. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 4th September 1872, No. 469 :—

With reference to the Order of Government No. 1,995, dated 21st August 1872, I have the honour to report that the Agents of the Madras, the Great Southern of India, and the Carnatic Railways have no objection to the insertion of the following proposed additional clause to Regulations, Part II., for the transport of troops :—

"When bodies of troops travel by rail the senior Non-commissioned Officer or Soldier in each compartment will be made responsible that no damages occur whilst the troops occupy it; and a memorandum will be taken at the time of entry, under the orders of the Officer commanding the troops, of the number of the carriage and compartment, and the name of the senior man in charge, who will report to the officer deputed to go down the line for the purpose after the men are seated, whether all is correct, and again whether all is correct before the men leave the train; a railway official inspecting each compartment, and reporting to the officer in command before the troops march off."

No. 250. Order thereon, 18th September 1872, No. 2,207.

RAILWAY, No. 41.

Ordered that the Government of India be advised accordingly.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 251. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,208.

RAILWAY, No. 42.

Sir,—With reference to the Proceedings of the Government of India under date the 30th July 1872, No. 1,184-G.

R., I am directed to state that the Railway Companies in this Presidency entertain no objection to the rule proposed to be added to Part II. of the Regulations for the transport of troops.

No. 252. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 9th September 1872, No. 478 :—

WITH reference to G. O. No. 1,800 of the 29th July 1872, I have the honour to report that the Agent of the Madras Railway has issued instructions for giving effect to the wishes of Government, namely, when third-class carriages are used on this Railway for the transport of British Troops, in cases of employment of extra trains or exceptional emergencies, double the space provided in second-class carriages shall be allowed to each soldier.

2. The Agent of the Great Southern of India Railway reports that the width of the seats in the third-class carriages belonging to that Company being the same as the width of the seats in the second-class compartments, no arrangement of the nature alluded to by the Government of India requires to be made.

No. 253. ORDER THEREON, 18th September 1872, No. 2,209.

RAILWAY, No. 43.

ORDERED that this letter be forwarded for the information of the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 254. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,210.

RAILWAY, No. 44.

SIR,—With reference to your letter, No. 1,070-G. R., dated 12th July 1872, I am directed to forward the accompanying communication from the Consulting Engineer in which that officer reports that the Agent of the Madras Railway has arranged for giving effect to the wishes of the Government of India in regard to the allotment of increased space when third-class carriages are used for the conveyance of troops. The seats of the third-class carriages on the Great Southern of India Railway being of the same size as those in second-class vehicles, the Agent does not consider any change in existing arrangements necessary.

No. 254A. Read the following letter from the Acting Deputy-Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 22nd August 1872, No. 438 :—

I HAVE the honour to forward herewith a letter* from the Agent and Manager, Madras Railway, submitting an estimate for the conversion of 15 coke-waggons

* Dated 21st August 1872, No. 601.

into cooly-class carriages, at a total cost of Rupees 6,000. The departmental expenditure, amounting to Rupees 1,500, it is proposed to meet as follows :—

	RS.	A.	P.
From savings on Item No. 15 of Schedule A. in the Budget for 1872-73	1,359	1	0
Do. Item No. 1, Schedule C., Minor Works	140	15	0
	1,500	0	0

Up to the 31st July last the cooly-class traffic between Madras and Jollarpett (132 miles) was provided for by 25 cooly-class carriages; the extension of the cooly-class to Coimbatore (302 miles from Madras) from the 1st instant has necessitated the provision of further accommodation.

2. I have the honour to request that sanction may be accorded to the estimate as well as to the necessary transfer of funds from Item 15 of Schedule A.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 21st August 1872, No. 604.

THE Traffic Manager having represented that the present stock of cooly-class carriages will not be sufficient to meet our requirements, consequent upon the extension of the cooly-class system to Coimbatore, I have the honour to submit, for the sanction of Government, an estimate* for converting fifteen coke-waggons into cooly-class carriages, at a cost of Rupees 6,000.

* In duplicate.

2. It is proposed to charge Rupees 140-15-0 from the head of "Minor Works," Locomotive Department, Budget 1872-73, and the balance of the Indian proportion of the estimate from Item No. 15 in Schedule A, Budget 1872-73, thus—

---	Budget Allotment.	Proposed Expenditure.	Balance available.
Minor Works, Locomotive Department, 1872-73.	RS.	RS. A. P.	RS. A. P.
Converting 15 Coke-waggons into Cooly-class Carriages	80,000	140 15 0	79,859 1 0

3. It is also proposed that the sanction, if accorded by the Government, shall lapse on the 31st March 1873.

No. 254B. ORDER THEREON, 18th September 1872, No. 2,211.

RAILWAY, No. 45.

ORDERED that the estimate submitted with this letter be forwarded for the sanction of the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 254c. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,212.

RAILWAY, No. 46.

SIR,—I am directed to forward the accompanying estimate, amounting to Rupees 6,000, for the conversion of fifteen coke-waggons into cooly-class carriages, and to request that, under the explanation afforded in the accompanying letter, the outlay may be sanctioned; the Indian expenditure of Rupees 1,500 being met as proposed by the Consulting Engineer.

No. 254D. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 9th September 1872, No. 137 :—

I HAVE the honour to request the sanction of Government to the transfer of Rupees 200 from the allotment of Minor New Works, Civil Buildings, Provincial, Neilgherry District, to the same head in Coimbatore.

No. 254E. ORDER THEREON, 18th September 1872, No. 2,213.

ACCOUNT, No. 31.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 254F. Read the following letter from the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Kokracolum, 16th August 1872, No. 2,325:—

IN reference to G. O. of the 6th instant, No. 58, calling for an immediate report of the cause of delay in submitting the descriptive roll of the widow of a cooly who was accidentally killed while he was engaged in blasting rocks on the Kodacanel Ghaut Road, I have the honour to report as follows.

2. On the 20th June 1871 the widow of the deceased cooly addressed a petition to me stating that her husband had met with a fatal accident on the 27th December 1870 when he was blasting rocks; that she had addressed two or three petitions both to the Superintending Engineer (my predecessor) and to the Range Officer on the subject, but that she had received no redress; and that she and her children were suffering great distress, praying, therefore, that one of her children may be employed on the road. This petition was referred* to Overseer Serjeant Hamilton, then in charge of the

* In my memorandum No. 1,495, dated 31st July 1871.

Dindigul Range, to see whether he could not arrange to employ, as proposed, one of the petitioner's sons in consideration of his father having died under the circumstances represented.

3. In reply Serjeant Hamilton informed me on the 11th August 1871† that the petitioner's son was only 1 year old and could not possibly be employed as petitioner requests; but that there would be no hindrance to petitioner being employed on the plains herself.

† Letter No. 150.

4. Serjeant Hamilton further stated that taking into consideration the circumstances under which the petitioner's husband had met with his death, and the destitute condition of petitioner and her child, it would not be too much to grant her a compassionate allowance of Rupees 50.

5. On the margin of the above letter I wrote an order on the 25th August 1871, No. 1,881, directing the Overseer in charge of the Range to prepare and forward Proceedings to investigate a claim to gratuity to the widow of the deceased cooly in the form printed at page 383 of Grant's Circular Order Book, and I returned the paper in original to the Range Office.

6. Not having received the Proceedings in question, Assistant-Engineer Mr. Lyon, who succeeded to the Dindigul Range, was requested by me on the 5th March 1872 to expedite the despatch of the document called for in memorandum No. 1,881, dated 25th August 1871, and he was at the same time requested to return the original letter from the Range Office, No. 150, dated 11th August 1871.

7. In reply Mr. Lyon applied‡ for a copy of memorandum just quoted as the original was not found in the Range Office.

‡ No. 490, dated 12th March 1872.

8. On the 19th March 1872§ I informed Mr. Lyon that this office memorandum No. 1,881, dated 25th August 1871, was written on the margin of Range Office letter No. 150, dated 11th August 1871, which latter has not been returned. He was requested to cause a careful search to be made in his office for the missing document and if not found to send a copy of Range Office letter above quoted.

§ No. 4,889.

9. Captain Pennycuick, R. E., who succeeded Mr. Lyon in the Dindigul Range, stated on the 26th April 1872, letter No. 47, that although a careful search has been made the missing document has not been found, and he forwarded a copy of the Range Office letter with an intimation that the Proceedings will be submitted so soon as received from the Periacolum Overseer, to whom instructions on the matter had been sent some time back.

10. Accordingly on the 31st May 1872* Captain Pennycuick forwarded the Proceedings to this office explaining that the delay in preparing them had arisen in consequence of the claimant (the widow of the deceased cooly) having left Periacolum and not having been found until lately.

* Letter No. 135.

11. As Captain Pennycuick had recommended a grant of Rupees 350 to the widow the Proceedings were returned by me to that officer on the 13th June 1872

pointing out to him that the gratuity admissible "shall in no case exceed the maximum limit of six months' pay of the deceased." Captain Pennycuick was at the same time requested to report whether an inquest was held or not on the body of the deceased workman.

12. The above Proceedings were corrected and returned by Captain Pennycuick on the 24th, received in this office on the 26th, and submitted to Government on the 29th June 1872 with my letter No. 1,441.

13. I may mention, in conclusion, that no report of the accident was made to this office by the then Range Officer, Assistant-Engineer Mr. O. A. Hayne, and that the fact only came to my knowledge on receipt of the petition above alluded to.

No. 254G. ORDER THEREON, 18th September 1872, No. 2,214.

ESTABLISHMENT, No. 19.

HIS EXCELLENCY the Governor in Council is compelled to express his dissatisfaction at the great delay which was allowed to occur in the disposal of the claim to gratuity preferred by the petitioner alluded to in Superintending Engineer's letter No. 2,325 dated 16th August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 254H. Endorsement of the Chief Secretary, dated Ootacamund, 17th July 1872.

From the Acting Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Tellicherry, 27th November 1871, No. 189.

As I understand the Upper Godavery works are to be closed, I beg respectfully to recommend that application be made to the Government of India for the transfer of one of the smallest and lightest draft of the steamers attached to those works for use on the Cochin backwater and canal.

2. If any small light draft steam dredges with iron spoil punts are also available, one of them would be of the greatest use for clearing the channel lines in the backwater at Cochin. During the five months of the year, I think this steamer might, with safety, with the dredge on board make the passage along the coast to Cochin. This, however, is a question for the Master Attendant to decide.

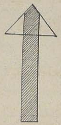
No. 254I. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 20th August 1872, No. 1,893.

ADVERTING to your letter of the 27th July 1872, No. 1,792-C., to the Chief Commissioner of Nagpore, and the list of floating stock, etc., proposed to be taken over from the Upper Godavery stores, which accompanied it, sent under wrapper

for my information, I have the honour to inform you that the steamer *Prince* will be of no service to us, owing to her bulkiness and besides to the large quantity of fuel which has to be used, and which we cannot afford to charge to the quarries. I would, therefore, suggest that she be made over to the Nagpore authorities, or offered for sale at Cocanada.

No. 254J. From the Master Attendant, Administrative Department, to the Chief Secretary to Government, Marine Department, dated Madras, 11th July 1872, No. 3,867.

WITH reference to Orders of Government, Public Works Department, dated 12th June 1872, paragraph 12, I have the honour to inform you that, in communication with Captain Castor, Master Attendant, Cocanada, I find that instead of buoying off the channel between Cocanada and Coringa, as recommended by Mr. Robertson, the Harbour Engineer, a great saving of time and money will be effected, the water being shallow, if it be marked out with stakes such as described in the margin, which can be done at once, placing a buoy abreast of Cocanada river, and another at the entrance of the Coringa river marking the intermediate distance as recommended to indicate the course of the channel; the stakes on the northern and southern sides to be painted different colours.



2. Two of the buoys in store at Cocanada will answer the purposes of marking the entrances of the Cocanada and Coringa rivers, but we have no others of the size to suit the marking out of the channel referred to, and the expense of buoys and their moorings for the distance to be marked, namely, 14,000 yards, will be very great.

3. A dredge can be worked in the channel as soon as it is marked out with stakes; but as the two Government dredges now at Cocanada are, I understand, laid up as unserviceable, they must either be repaired or new ones procured.

4. It appears to me that the most urgent requirements for Cocanada and Coringa are the marking out of this channel as described;* and Captain Castor can at once furnish an estimate of the cost of marking it with stakes, and be ready to begin operations as soon as the sanction of Government be obtained.

* *Vide* Mr. Robertson's report, paragraph 2.

5. I also recommend that the dredges,† when available, be placed under the orders of the Marine Department, the Master Attendant being the best judge as to when and where they are to be used.

† NOTE.—They should be 25 or 30 H. P.

6. I would moreover strongly urge the necessity of the services of a steam sea-going tug for Cocanada‡ as recommended by Mr. Robertson, and that measures be immediately taken, either

‡ Of 60 H.P. Cost of establishment per month Rupees 191, as per annexed memorandum.

for the purchase of one at Bombay if procurable, or the building of one either there or at Cocanada, and I respectfully request the early orders of Government on these important subjects.

7. In regard to the question of a floating or fixed light at Hope Island, I shall send in a separate report.

For Steam Tug.

	RS.
Engineer ...	100
2 Lascars ...	16
3 Firemen ...	27
Syrang ...	18
Contingencies ...	30
Total...	191

REFERRED to the Public Works Department, with a request that information may be furnished as to the condition of the steam dredges, and whether it will be better to repair them or construct new dredges, and the probable cost of these and of a steam tug.

(Signed) R. S. ELLIS,
Chief Secretary.

No. 254K. ORDER THEREON, 18th September 1872, No. 2,215.

ACCOUNT, No. 32.

THE Superintending Engineer of the 1st Division will be informed that the steamer *Prince* is designed for use by the Marine Department at Cocanada as recommended in Mr. Robertson's report, and paragraph 6 of letter from the Master Attendant, Administrative Department, No. 3,867 of 11th July; and he will accordingly forward it, when received, to the Master Attendant at Cocanada, if the state of the river permits of its being passed over the anicut.

2. The following articles of floating stock, mentioned in the list referred to by the Superintending Engineer, are destined for use at Cochin, and will be transmitted to their destination in communication with the Superintending Engineer of the 7th Division, namely:—

Steamer *Fawn.*
Steam Dredge and Jolly Boat.
Two 8-Ton Iron Punts.
One Iron Paddle Boat.
Five $2\frac{3}{4}$-Ton Wooden Flats.

Any necessary repairs required to the boiler of the *Fawn* being made before her despatch.

3. The rest of the floating stock mentioned in this and the list which accompanied letter to the Chief Commissioner of Nagpore, No. 1,865-A of 7th August 1872, are meant for use on the Godavery and Kistna works, as may be arranged by the Superintending Engineers of the 1st and 2nd Divisions.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers:—

No. 254-L. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 10th June 1872, No. 945.

ADVERTING to G. O., No. 1,358, dated 31st ultimo, I have the honour to state that I am unable to furnish you with a statement of the average annual outlay on the repair of towing-paths for five years ending 1870-71, as works of this nature, I observe, had been carried out under one estimate, namely, that for maintaining canal banks generally, from the repair allotment of the division for "Agricultural" and Communication works.

2. With regard to the specific sum which will be required during the current year for keeping tow-paths in order, I have to state that since assuming charge of this division in April 1869, I made no distinction in the repairs between tow-paths and canals, but allotted funds as required by the Range Officers. A great deal had to be done at first, as no such thing as a tow-path, even on the main Cocanada Canal, had been maintained for years, and the whole of the banks were covered with dense jungle, by degrees we have got things into better order, and I consider the present arrangement as good a one as can be made for maintaining the canal banks and tow-paths. Range Officers have been directed to attend to the requisition in paragraph 3 of the G. O. under reply. Their reports, when received, will be duly communicated to you.

No. 254-M. From the Officiating Superintending Engineer, 2nd Division, to the Secretary to Government, Public Works Department, dated Camp at Guntoor, 22nd June 1872, No. 49.

As desired in G. O. No. 1,358 of 31st ultimo, I have the honour to submit statements showing the sums required for expenditure on the towing-paths of this division during the current official year, and the average annual outlay on these lines from 1867-68 to 1871-72 inclusive.

2. To ascertain the average annual outlay during five consecutive years, I have included the expenditure incurred in 1871-72 in statement No. 2, as the first allotment for the maintenance of towing-paths was made in 1867-68.

No. 1.

Statement showing the amount required for the maintenance of the towing-paths in the 2nd Division during the Official year 1872-73.

Canals.	Length in Miles.	Rate per Mile.	Amount.
Eastern Delta.			RS.
Masulipatam Canal ...	48	30 Rupees.	1,440
Ellore Canal ...	39		1,170
Western Delta.			
Nizampatam Canal ...	41		1,230
Commamore Channel ...	51		1,530
Total...	......	......	5,370

No. 2.

Statement showing the average annual outlay on towing-paths in the 2nd Division during the last five years.

Years.	Expenditure.	Remarks.
	RS.	No allotment was made for the towing-path of the Commamore channel prior to 1870-71.
1867-68	1,969	
1868-69	3,029	
1869-70	2,277	
1870-71	3,580	
1871-72	4,995	
	15,850	
Average...	3,170	

No. 254-N. ORDER THEREON, 18th September 1872, No. 2,216.

IRRIGATION, No. 13.

IN paragraph 3 of G. O., No. 1,358, dated 31st May 1872, the Superintending Engineers of the 1st and 2nd Divisions were directed to report the specific sums which would be required during the current year for the maintenance of the towing-paths of the canals in the Godavery and Kistna Deltas, and to submit statements of the average annual outlay debited to Imperial funds for the five years ending in 1870-71.

2. The Superintending Engineer of the 1st Division reports that the maintenance of the towing-paths in the Godavery Delta has been provided for from the allotment for Agricultural repairs; that no special estimates were passed for the maintenance of the towing paths, but that they were repaired from the estimates for repairing the banks which the towing-paths for the most part follow.

3. The Superintending Engineer submits estimates as per margin for maintaining the towing-paths in 1872-73; the estimates vary from 5 to 30 Rupees per mile, and are not based on actual expenditure incurred in previous years. His Excellency the Governor in Council directs that the towing-paths in the Godavery Delta may be maintained, as heretofore, from the Agricultural allotment.

	RS.
Eastern Delta	3,560
Central do.	1,985
Western do.	875

4. The Superintending Engineer of the 2nd Division states that the expenditure in maintaining towing-paths in the Kistna Delta has been as per margin, and submits an estimate of Rupees 5,370 for the maintenance of the towing-paths in 1872-73.

	RS.
1867-68	1,969
1868-69	3,029
1869-70	2,277
1870-71	3,580
1871-72	4,995
Total...	15,850
Average...	3,170

5. The towing-paths have hitherto been maintained from the grant for

"Communications;" they for the most part follow the spoil banks, and should hereafter be provided for from the allotment for Agricultural repairs.

(Signed) R. F. OAKES, Major, R.E.,
Acting Joint Secretary to Government.

No. 255. Read the following endorsement of the Officiating Controller of Public Works Accounts, dated Fort St. George, 9th September 1872, No. 1,262:—

From the Officiating Superintending Engineer, 6th Division, to the Controller of Public Works Accounts, dated Tanjore, 5th September 1872, No. 424.

REFERRING to the Distribution List of Office Establishments forwarded with G. O. No. 1,908, dated 12th August 1872, I have the honour to point out that No. 3 Range, Tanjore, should be called Mayaveram Range, as at present, instead of Nunnilem, the head-quarters being at Tranquebar in the Mayaveram Taluq; and that No. 2 Range, Trichinopoly, should be called Museri Range, instead of Kulitalay, as the present head-quarters are at Museri.

SUBMITTED for the information of Government.

2. The proposed alterations will be made in the copy of Distribution Statement on the records of this office.

(Signed) D. H. TRAIL, Captain, R.E.,
Officiating Controller of Public Works Accounts.

No. 256. ORDER THEREON, 18th September 1872, No. 2,217.

ESTABLISHMENT, No. 18. RECORDED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 257. Read the following letter from the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 7th September 1872, No. 2,521:—

I HAVE the honour to submit, for the sanction of Government, a plan and estimate amounting to Rupees 1,570, for putting a ridge ventilator to the roof of the Serjeant's and Apothecary's quarters attached to the Garrison Hospital at the Mount, and for building a latrine (the counterpart of one already in existence) for hospital nurses.

2. The estimate and plan have received the approval of His Excellency the Commander-in-Chief.

3. I beg to state that a very small balance remains out of the District allotment for Military Minor New Works.

No. 258. ORDER THEREON, 18th September 1872, No. 2,218.

MILITARY WORKS, No. 9.

THE estimate of Rupees 1,570 is sancitoned, but the Governor in Council regrets that he is not at present in a position to provide the requisite funds.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 259. Read the following letter from the Officiating Deputy-Secretary to the Government of India, Public Works Department, (Account—General,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 13th August 1872, No. 722-A. G. :—

I AM directed to acknowledge receipt of your application No. 1,606, dated 4th July 1872, and, in reply, to convey sanction to the re-appropriation of Budget Credits therein detailed. But with reference to the works entered under the head "Agricultural," I am to ask that it may be specified in each case whether the outlay is to be charged to the head "Capital" or "Revenue." This information is specially required in the case of the item of Rupees 10,000 for river-embankment on the west bank of the Godavery which would appear to be chargeable to revenue, as the money is to be expended on an existing river-embankment which should have been kept in repair from Revenue Funds, and must, if such be seen necessary owing to its repair having been neglected, be restored from revenue. The fact that the work is also to be used as a road affects the question to this extent that as the repairs are, in future, to be executed from Local Funds, the proposed additions to the strength of the embankment may fairly be charged to the ordinary revenue which is to be relieved of the charge of future repairs.

2. I am to add that similar information should invariably be given in all future applications for a re-appropriation of the grant for agricultural works.

No. 260. ORDER THEREON, 18th September 1872, No. 2,219.

ACCOUNT, No. 31.

COMMUNICATED to the Superintending Engineers of the 1st, 2nd, 3rd, 4th, and 5th Divisions, and Major Kennedy.

2. The Government of India will be addressed with reference to paragraph 1.

(Signed) R. F. OAKES, Captain, R.E.,
Acting Joint Secretary to Government.

No. 261. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,220.

ACCOUNT, No. 32.

SIR,—With reference to letter No. 722-A.G., dated 13th August, from the Deputy-Secretary to the Government of India, I am directed to inform you that Items 5 to 9 should be charged to Capital.

2. With regard to No. 4, which provides for improving the west bank of the Godavery between Vijesweram and Polaveram, with a view of carrying a road along it, I am to inform you that a grant of Rupees 50,000 was made by this Government from the allotment under Agricultural in aid of the Local Funds from which Rupees 30,000 will be provided for the road, as those sums represent the relative Imperial and Local interests in the work which, on completion, will be maintained from Local Funds.

3. I am to point out that the conditions under which an allotment has been made from the Agricultural Grant for this work are precisely similar to those under which an allotment was made for the road from Rajahmundry to Rahitapuram relative to which the Government of India were addressed in letter No. 1,832, dated 3rd August, and to request that the Rupees 10,000 required for the west embankment of the Godavery may be transferred from the head "Agricultural" to that of "Communications."

No. 262. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 18th September 1872, No. 2,221.

CIVIL WORKS, No. 16.

SIR,—I am directed by the Right Honourable the Governor in Council to forward ninety-five copies of the Administration Report of the Public Works Department of this Presidency for the past official year.

No. 263. Read the following Endorsement of the Officiating Controller of Public Works Accounts, dated Madras, 6th September 1872, No. 1,240 :—

From the Officiating Superintending Engineer, 2nd Division, to the Controller of Public Works Accounts, dated Camp at Nellore, 31st August 1872, No. 47.

WITH reference to Statement B of your letter No. 191, embodied in G. O. No. 1,908 of 12th instant, I have the honour to call your attention to the circumstance that Rupees 171 have been entered as the amount sanctioned for the establishment of the Central, instead of for the Southern Range Office, and to request you will be so good as to have the necessary corrections made.

SUBMITTED for the information of Government.

2. The necessary corrections will be made in the Statement of Range Office Establishments on record in this office.

(Signed) D. H. TRAIL, Captain, R.E.,
Offg. Controller of Public Works Accounts.

No. 264. ORDER THEREON, 19th September 1872, No. 2,222.

ESTABLISHMENT, No. 19.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 265. Read the following letter from the Officiating Quarter Master General, to the Secretary to Government, Public Works Department, dated Fort St. George, 7th September 1872, No. 402-6,794:—

I HAVE the honour to forward report and estimate for Rupees 1,103 for making and putting up punkahs and other trifling work required for the European Female Hospital at Bellary.

2. The estimate is approved by His Excellency the Commander-in-Chief. The Superintending Engineer of the 3rd Division reports that there are no funds under "Minor New Works Military" to carry out the work; but as the punkahs are emergently required, I am directed by Sir F. P. Haines to request that funds may be allotted from some other source for so much of the work as refers to punkahs, for which a sum of Rupees 750 will be required.

No. 266. ORDER THEREON, 19th September 1872, No. 2,223.

MILITARY WORKS, No. 10.

THE estimate of Rupees 1,103 is sanctioned.

2. The Superintending Engineer will arrange for putting up the punkahs at a cost of Rupees 750 in anticipation of an allotment of funds hereafter. The remainder of the work provided for in the estimate should be carried out from the grant for Minor New Works.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 267. Read the following Endorsement of the Superintending Engineer, 5th Division, dated Camp at Válore, 26th August 1872, No. 102:—

From the Executive Engineer, Bangalore, to the Superintending Engineer, 5th Division, dated Bangalore, 2nd August 1872, No. 507.

WHEN I took up my appointment at Bangalore I supposed that I was entitled to a carriage allowance of 50 Rupees a month. I have now seen a letter from

Assistant Secretary to Government of India, Public Works Department, dated 9th July 1869, which stops the allowance.

2. I beg to point out that this ruling bears hardly on the Executive Engineers in charge of works at large stations, inasmuch as it is simply impossible that their duties can be carried on without a carriage, and hence the effect of the order in question is to reduce their salaries by 50 Rupees a month. At this station it would be impossible to supervise the numerous and very scattered works without both a saddle-horse and a carriage. I am in charge of the Fort as well as the works in the Cantonment. My house is as well situated with reference to the works as it could possibly be, still if I wish to go to the Fort I have to ride or drive there and back a distance of seven miles. The Sapper lines are two miles distant in quite another direction; the Native Infantry lines two miles again in a different direction; and the Commissariat buildings two miles in quite an opposite direction. It may frequently happen that my work requires me to visit two or more of these works widely separated on the same day. Thus, supposing I have to visit the Sapper lines and the Fort on the same day, I should have to traverse a distance of ten miles.

3. In addition to this my position here, with reference to the Military Authorities, renders it absolutely necessary that I should keep up a certain amount of social intercourse with them, without which work cannot be carried on in a satisfactory manner.

4. My present expenses for means of locomotion about this large station is more than 50 Rupees a month.

5. The allowance is, I observe, to be continued at the Presidency on the grounds that the Engineers there get no other extra allowance; a carriage is quite as indispensable at Bangalore as at Madras, and as the Engineer here gets no other extra allowance, I respectfully beg to point out that the carriage allowance of 50 Rupees should also be passed to him.

6. I have therefore the honour to request you will be so good as to represent the case to Government with the view of obtaining the sanction of Government of India for the allowance.

SUBMITTED at the request of Captain Vibart for the orders of Government.

(Signed) E. A. FOORD, Colonel, R.E.,
Superintending Engineer, 5th Division.

No. 268. ORDER THEREON, 19th September 1872, No. 2,224.

ESTABLISHMENT, No. 20.

HIS Excellency the Governor in Council declines to re-open the question of granting carriage allowance at Bangalore, it having been definitely settled by order of the Government of India, No. 1,100 E, of 9th July 1869, that no extra allowances are to be drawn by Public Works Officers in charge of large stations, excepting only the Presidency Towns.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 269. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 2nd September 1872, No. 461 :—

With reference to the Order of Government, No. 1,573 of the 28th June 1872, I have the honour to inform you that the Examiner of Railway Accounts reports that he is perfectly satisfied that the vouchers forthcoming for the items—

	RS.	A.	P.
Unconsumable stores issued prior to June 1865	90,067	12	4
Workshop manufactures	1,46,708	10	7

are *bona fide* in character.

2. With reference to paragraph 3 of the order above quoted, I beg to state that the Deputy Consulting Engineer for Railways has made an examination of the open line of the Great Southern of India Railway, and reports that the number of points and crossings actually found on it exceeds thirty-seven.

3. In regard to the item "wastage of timber," Rupees 57,404-1-5, which the Government of India are of opinion should be written off wholly to Revenue, the Agent explains that in their Order of the 25th July 1870, No. 1,777, the Government of Madras were pleased to authorize a charge on a similar account, though for a subsequent period, being written off to the debit of "Works of construction."

No. 270. Order thereon, 19th September 1872, No. 2,225.

RAILWAY, No. 45.

This letter will be forwarded for the orders of the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 271. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 19th September 1872, No. 2,226.

RAILWAY, No. 46.

Sir,—With reference to your letter, No. 779 A. R., dated 10th June 1872, communicating the orders of the Government of India on the proposals contained in my letter of the 24th April 1872, No. 1,055, for the adjustment of the differences between the actual and book value of the stock of the Great Southern of India Railway, I am directed to forward the accompanying communication from the Consulting Engineer in which that officer reports that the Examiner of Railway Accounts is satisfied with the *bona fide* character of the vouchers produced for the items, aggregating Rupees 2,36,776-6-11, referred to in paragraph 2 of your letter, and that the Deputy Consulting Engineer has verified, by actual inspection, the number of points and crossings in the line.

2. Under these circumstances, it is understood that these items may be dealt with in the manner originally proposed.

3. His Excellency the Governor in Council, I am to say, has no wish to urge a reconsideration of the orders already passed by the Government of India in regard to the sum of Rupees 57,404-1-5, representing wastage on timber.

No. 272. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Pollachy, 26th August 1872, No. 118 :—

I have the honour to submit, for the sanction of Government, a revised estimate* and comparative statement for the water-supply project north side of Ootacamund ; the cause of excess over the sanctioned estimate† is fully explained in the accompanying letter‡ from the Range Officer. As the want of water is much felt, more especially in the dry months of the year, I beg that an allotment of Rupees 2,790 may be made in order that the work may be completed within the current official year.

* No. 28 of 1872-73, Rupees 16,260.

† G. O. No. 195 of 24th January 1871.

‡ No. 168 of 22nd August 1872.

No. 273. Order thereon, 19th September 1872, No. 2,227.

CIVIL WORKS, No. 17.

With this letter the Superintending Engineer of the 7th Division submits a revised estimate of Rupees 16,260, or Rupees 2,790 in excess of the estimate last sanctioned in G. O. 24th January 1871, No. 195, for the project designed to supply drinking water on the north side of Ootacamund. This increase is fully accounted for by its occurrence chiefly in the tunnel, where an amount of rock was unexpectedly encountered, which it was most difficult to blast and otherwise remove in so confined a space. For the same cause the rates of brick-work and plastering have unavoidably exceeded ordinary local rates. His Excellency the Governor in Council sanctions the revised estimate, and as the early completion of the project is very desirable, the Financial Department will be requested to provide the sum of Rupees 2,790 from the funds at its disposal under Provincial Services.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 274. Read the following letter from the Postmaster-General, Madras, to the Secretary to Government, Public Works Department, dated Camp at Bangalore, 29th August 1872, No. 2,856-220 :—

With reference to Government Order of the 7th May 1868, No. 1,440, I have the honour to forward copy of a letter from the Director-General of the Post Office of India, No. 2,283, dated 2nd August 1872, from which it appears that the

sanction of this office is not necessary for repairs to postal buildings by the Public Works Department, as this department does not budget for such repairs.

2. Besides the reasons given by the Director-General of the Post Office, there are other reasons as follows :—

1st.—This office cannot exercise due check on the estimates of the Local Engineers.

2nd.—Much correspondence that now takes place appears to be wholly unnecessary.

3rd.—Great delay takes place by the present practice when the estimates are forwarded by the Superintending Engineers from distant divisions, and it becomes necessary to make a reference, and much inconvenience may result from such delay at any time.

3. Under these circumstances, I beg Government will be pleased to pass orders with a view to the Public Works Department arranging for the repairs of postal buildings without reference to this office, except in cases of doubt in connection with the repairs of any particular building.

From the Officiating Deputy Director-General of the Post Office of India, to the Postmaster-General, Madras, dated Simla, 2nd August 1872, No. 2,283.

Referring to the correspondence which end with your letter, No. 110-220, dated 21st July, I have the honour to state that no sanction is necessary from this department for repairs to postal buildings.

2. This department does not budget for such repairs, the provision for this class of work being left to the discretion of the Loca Government.*

3. In the memorandum† issued with this Office Circular No. 54, dated 20th December 1867, it was laid down that the repairs of all postal buildings borne in the Public Works Department books will be arranged for by that department, requisition being made, *if necessary*, by the local Postal Officer to the Executive Engineer.

4. In cases of doubt a reference may properly be made to your office in connection with the repair of any particular building, but the transmission for your sanction of all estimates for repairs would be a wholly superfluous increase of correspondence never intended by the Government.

5. I feel sure that a proper representation from you to the Government of Madras will ensure a recognition of the principle above laid down.

* *Vide* paragraph 2, Government of India, Public Works Department Circular No. 48, dated 29th June 1869, issued with this Office Circular No. 57, dated 16th August 1869.

† This memorandum was approved of by the Government of India, Public Works Department.

No. 275. Order thereon, 19th September 1872, No. 2,228.

CIVIL WORKS, No. 18.

Government Order, 7th May 1868, No. 1,440, prescribed that repairs to Post Offices in this Presidency should be carried out under the sanction of the Postmaster-General, provided the outlay in each case was less than one-fourth of the value of the building. The Circular of the Government of India, dated 29th June 1869, No. 48, to which reference is made by the Officiating Deputy Director-General of the Post Office of India,

left it discretional with the Local Government to appropriate a certain portion of the grant for postal buildings to repairs, and to place a part of the money at the disposal of the heads of departments concerned. In communicating to Superintending Engineers with G. O. No. 2,527 of 2nd August 1869, the Circular of the Government of India, the ruling in the first of the Government Orders above quoted was not cancelled; but, under the circumstances represented in the papers recorded at the head of these Proceedings, the previous sanction of the Postmaster-General will in future be dispensed with by Superintending Engineers, who will be authorized to carry out all repairs to postal buildings within the limits of the grants at their disposal, except when the outlay exceeds one-fourth the value of the building, when the sanction of Government should, as in the case of all other buildings, be obtained.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 276. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1872, No. 452:—

In compliance with the instructions conveyed in the Order of Government dated the 23rd April 1872, No. 1,042, I have the honour to submit two letters* from the Agent of the Madras Railway, with enclosures from the Chief Engineer, giving full explanation of the advantages which may be expected from the proposed substitution of an iron for a wooden road upon the 101 miles of the South-West Line between Muddikerry and Beypore.

* No. 283 of 6th May 1872.
,, 605 of 21st August 1872, with Enclosures.

2. It will be seen that Mr. Anderson is unable to give the exact comparison called for by the Government of India in the 3rd paragraph of their letter; but he shows that the cost of maintaining the iron road is less than one-third of the cost of maintaining the wooden road; the exact figures, taking the average of five years from 1867 to 1871 inclusive, being, per mile per annum, Rupees 492 on the former and Rupees 1,506 on the latter.

3. In order to ascertain the comparative economy of renewing the portion of the railway in question with iron sleepers and with wooden sleepers, I requested that the cost of the latter work might be estimated, and the probable sum is shown by the Chief Engineer's estimate to be Rupees 5,47,551. Interest on this outlay at 5 per cent. comes to Rupees 27,388; and the cost of maintaining the wooden road may be taken as 1,506 × 101, or Rupees 1,52,106. The whole annual outlay chargeable to the restoration and maintenance of the wooden road along these 101 miles of line may therefore be said to be Rupees 1,79,484.

4. On the other hand the estimate for the restoration with iron sleepers comes to Rupees 12,67,846, and the interest on this is Rupees 63,392. The annual maintenance may be taken as 492 × 101, or Rupees 49,692; so that the

whole annual outlay chargeable to the restoration and maintenance of these 101 miles of road with iron sleepers may be taken to be Rupees 1,13,084.

5. The difference between those amounts is Rupees 66,400, and this sum may fairly be taken to represent the annual saving which will be effected by the substitution of iron for wood.

6. I have the honour, therefore, to request that sanction may be accorded to the estimate amounting to Rupees 12,87,381; of which sum, as mentioned by Major Prendergast in his letter of the 4th March 1872, Rupees 3,18,577 is chargeable to Capital, and Rupees 9,68,804 to Revenue.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 6th May 1872, No. 283.

ADVERTING to your letter No. 289 of the 25th ultimo, with which was forwarded a copy of G. O., No. 1,042, dated the 23rd idem, I have the honour to invite your attention to the enclosed copy of report from the Chief Engineer* in which are explained the reasons which prevent his furnishing the statistics called for by the Government of India showing the comparative cost of maintenance on the 33 miles of line between Avenashy and Muddikerry before and after the substitution of iron for wooden sleepers.

* No. 199, dated 4th May 1872.

2. Mr. Anderson observes :—

"I received sanction to undertake this work in November 1870 (*vide* G. O., No. 2,827, dated 23rd November 1870,) and commenced operations in January 1871.

"The average life of a wooden sleeper on that portion of the line has been about four years, so that the renewal with iron sleepers will not be completed under that time, or say the end of 1874. It is only when wooden sleepers become unsound that they are removed and iron sleepers substituted. Up to the present not more than one-fifth of the total number of iron sleepers has been put in, and as these are distributed over the whole 33 miles, it is plain that any statistics I could now give would be of no value whatever."

3. We have had however, as Mr. Anderson remarks, the fullest experience of the use of pot sleepers on other parts of the line, and I trust that the information given in the enclosed report together with that supplied by the Chief Engineer in his letter, No. 458,* dated 4th December 1868, will convince the Government of India of the reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers.

* Copy forwarded to you with my letter No. 545 of 10th December 1868.

4. The estimates which have been submitted for relaying with pot sleepers the line between Muddikerry and Beypore appear to me to contain the fullest possible details, but if you can suggest any additional information which should be supplied, I shall be very happy to forward it to you for transmission to the Government of India.

5. I trust it will not be overlooked that, in consequence of the delay which has taken place in sanctioning the estimates, the Chief Engineer will have to renew the contract for the supply of wooden sleepers, thus entailing upon the Company an expense which, I think, is to be regretted.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 4th May 1872, No. 199.

YOUR endorsement dated 26th ultimo, on Consulting Engineer's letter No. 289 of 25th idem.

I regret to say I am not yet in a position to furnish a report upon the comparative cost of maintenance on the 33 miles of line between Avenashy and Muddikerry before and after the substitution of iron for wooden sleepers.

2. I received sanction to undertake this work in November 1870 (*vide* G. O., No. 2,827, dated 23rd November 1870,) and commenced operations in January 1871.

3. The average life of a wooden sleeper on that portion of the line has been about four years, so that the renewal with iron sleepers will not be completed under that time, or say the end of 1874. It is only when wooden sleepers become unsound that they are removed and iron sleepers substituted. Up to the present not more than one-fifth of the total number of iron sleepers has been put in, and as these are distributed over the whole 33 miles, it is plain that any statistics I could now give would be of no value whatever.

4. The reduction in the cost of maintenance effected by the use of iron instead of wooden sleepers is, however, no new question on the Madras Railway. We have the fullest experience on the subject.

5. The whole of the North-West Line and the Bangalore Branch were originally laid with iron sleepers, while the South-West Line was laid with wooden sleepers.

6. The great economy resulting from the use of iron sleepers, however, led to their adoption by degrees on the South-West Line, until at present the only portion of our railway where wooden sleepers are used is the length between Muddikerry and Beypore.

7. This question has been so frequently discussed and so thoroughly ventilated that I had looked upon it as quite exhausted.

8. From amongst the numerous reports that have been issued from time to time from my office, I would ask particular attention to a letter No. 458 of 4th December 1868, where, in reply to Consulting Engineer's letter No. 394 of 2nd December, forwarding copy of G. O. No. 3,733 of 30th November, I enter into the fullest details with reference to an iron sleeper road, and show that while the cost of maintenance of the 1st Division, North-West Line, laid with iron amounts to Rupees 503-13-5 per mile per annum, the cost of maintenance of the 4th Division, South-West Line, a wooden road, and the one which I now propose to relay wit iron sleepers amounts to Rupees 1,596-7-6 per mile per annum.

9. Knowing that I had but little to add to the information already in the possession of Government, and feeling certain that that information could but result in assuring sanction for my estimate, I requested you to serve a notice upon our sleeper contractors terminating their contract under the usual conditions. Your notice dates from 20th February, and the contract therefore expires on the 22nd of this month. It will now become necessary to take immediate steps to have the contract renewed. Much as I should desire to bring expenditure on account of wooden sleepers to a close, it would manifestly be imprudent to allow the stock of wooden sleepers to run too low.

10. As regards the request that details should be furnished of the estimate submitted, I have only to observe that I am utterly at a loss to imagine what details can possibly be referred to. My estimate gives the number of miles laid with 65 lbs. rails and the number laid with 75 lbs. rails; it gives the quantity and cost of materials per rail length of each description, together with the rate for each article.

Pot Sleepers.
Tie-bars.
Gibs.
Cotters, and
Wooden Keys.

Nothing has been omitted. The estimate is as complete and detailed as it is possible to make it.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 21st August 1872, No. 605.

With reference to your letter No. 361 of the 14th May last, I have the honour to enclose you a copy of the Chief Engineer's letter, No. 390, dated the 20th instant, in which Mr. Anderson

furnishes further information called for by you with regard to the relative merits of iron and wooden sleepers.

2. I regret to say that I am not in a position to furnish a statement of the number of trains hauled over each division as called for in the last part of paragraph 5 of your letter. The information can be got out if you desire it; but the Traffic Manager tells me that, up to the present time, he has been quite unable with his existing staff to do so, and has suggested that an additional clerk shall be employed for the purpose, adding that it will take him about two-and-a-half months to get out the information for the period you require it. You will readily understand this if you bear in mind that, in addition to going through the time-tables, the records, guards' journals, etc., will have to be gone through for traces of special goods train, etc.

3. With regard to the 7th paragraph of your letter, the Locomotive Superintendent informs me that he has kept no statistics which will enable him to furnish you with the report you ask for.

4. The information which the Chief Engineer has been able to furnish has given him a considerable amount of labour, which will account for the delay that has occurred in replying to your letter. I trust, however, that Mr. Anderson's report, a copy of which is now forwarded, will enable you to dispose of the subject.

From the Chief Engineer, to the Agent and Manager of the Madras Railway Company, dated Madras, 20th August 1872, No. 390.

Consulting Engineer's letter No. 361 *of the* 14*th May last.*

During the years 1860 and 1861, 29,807 creosoted pine sleepers were received from England of which nearly the whole were used on the 1st Division, South-West Line, but they cannot be said to have undergone a satisfactory trial, as they were taken up after five or six years to be replaced by iron-pot sleepers.

2. When taken out of the road the sleepers were found to be in a generally sound state, although a large proportion were rendered useless in consequence of the trenail holes having either worked too large or become rotted. The serviceable creosoted sleepers were used for renewals on the 3rd Division, South-West Line, and lasted fairly well until replaced by pots.

3. The experience on the Madras Railway does not enable me to dispute the statement that the average life of creosoted pine sleepers on the Great Southern of India Railway is twelve or thirteen years, provided the ballast is suitable and the climate not extreme.

4. The climate of the Western Coast, however, where I now proposed to introduce iron sleepers is the very most trying on our railway; and I should most strongly object to the use of a material of which we have had no experience under the conditions to which it would have to be exposed.

5. 730 miles of the Madras Railway are laid with iron sleepers, and we know with certainty that they will prove as great a success on the western division as on the rest of our line; there is therefore, not a single argument in favor of our risking an addition to the many costly failures the railway has had to deplore in this matter of sleepers.

6. The expedient proposed with a view to reducing the cost of ballasting is not so "entirely novel" as the Consulting Engineer appears to think. The same plan has been adopted with much success on the 1st Division, South-West Line.

The estimate for renewing the line between Muddikerry and Beypore, forwarded with my letter No. 45 of the 29th January 1872, gives the additional expenditure anticipated under this head.

7. I will now give you in detail the information called for by the Consulting Engineer :—

1st.—The cost per mile of maintenance of permanent-way for five years from January 1867 to December 1871.

1st Division, North-West Line.	Cost per mile per annum.			4th Division, South-West Line.	Cost per mile per annum.		
Iron Road.	RS.	A.	P.	*Wooden Road.*	RS.	A.	P.
Inspectors	40	3	2	Inspectors	60	5	7
Watchmen	74	14	1	Watchmen	48	1	1
Labour	254	8	4	Labour	303	13	5
Tools	24	5	0	Tools	31	3	2
Materials.				*Materials.*			
Rails	7	10	2	Rails	19	11	8
Sleepers	16	7	2	Sleepers	955	5	1
Ballast	73	10	3	Ballast	87	11	9
Total ...	491	10	0	Total...	1,506	3	9

This result it will be observed does not materially differ from that given in my letter No. 458 of 4th December 1868, which was as under :—

1st Division, North-West Line, Rupees 503-13-5 per mile per annum.

4th Division, South-West Line, Rupees 1,596-7-6 do. do.

Ballast.—An iron-pot sleeper road requires more ballast in the first instance than a wooden sleeper road, but the latter requires more ballast for maintenance owing to the loss occasioned by the disturbance due to frequent renewals.

2nd.—The total number of sleepers in way per mile and the number of renewals per mile.

1st Division, North-West Line.
3,101 Pot sleepers in way per mile.
2·15 Renewed per mile per annum.

4th Division, South-West Line.
1,830 Wooden sleepers in way per mile.
329 Renewed per mile per annum.

3rd.—The approximate average age of sleepers on each division.

I am not in a position to state the age of sleepers on 1st January 1867, but the age on 1st October 1871 was as under—

	Y.	M.	D.
1st Division, North-West Line	7	9	7
4th Division, South-West Line	3	6	20

4th.—The average cost of sleepers and average lead by rail.

	RS.
1st Division, North-West Line.	
Cost of sleepers	13,47,857
Average lead by rail (102 miles)...	1,45,936
4th Division, South-West Line.	
Cost of sleepers	*5,19,640

Wooden sleepers are delivered on the Western Coast.

5th.—The probable average cost and average lead by rail of pot sleepers and creosoted pine sleepers on the section between Muddikerry and Beypore.

	RS.
Cost of pot-sleepers	12,67,846
Average lead by rail (357 miles)	1,31,912
Total...	13,99,758
Cost of pine sleepers	†6,51,808
Average lead by rail (357 miles)...	95,663
Total...	7,47,471

* This amount does not include the cost of chairs and trenails, which is as follows :—

Cast Iron Chairs...	Rs. 372,408
Iron Trenails	,, 77,946
Total Rupees...	450,354

† To this must be added an allowance for breakage of chairs and trenails in renewal.

Chairs, say 10 per cent.	Rs. 34,207
Trenails, say 30 per cent.	,, 21,435
Total Rupees..	55,642

6th.—Number of trains hauled over each division.

I have applied to the Traffic Manager for such information as would enable me to answer this question and append a copy of his reply.

8. My estimate of Rupees 12,87,381 represents the entire cost of renewing the permanent-way with iron sleepers; no deduction has been made on account of the expenditure which would have been incurred in renewals with wooden sleepers.

9. I forward, as requested, a detailed estimate of the cost of completely renewing the line with wooden sleepers, amounting to Rupees 5,47,551.

10. The Locomotive Superintendent will best enable you to reply to the last paragraph of the Consulting Engineer's letter; but this question appears to have been dealt with so long ago as February 1866, *vide* Consulting Engineer's letter No. 108 of 17th February 1866, Mr. Smart's letter No. 707, printed in the Proceedings of Government, No. 530 of 15th February 1866, and Mr. Pinson's letter No. 5 of 21st February 1866, sent to you with this Office letter No. 123 of same date. In fact, the whole subject is now thoroughly threadbare, and additional reports, although they entail considerable trouble and loss of time, fail to throw any further light upon the question.

From the Deputy Traffic Manager, to the Chief Engineer, dated Madras, 12th June 1872, No. [illegible]
Your letter No. 536 of 8th instant.

The information required in your letter of above reference will occupy a clerk about two and a half months to furnish, and as my staff of clerks is very limited I cannot spare a man to compile the information. I shall, however, be glad to engage an extra hand to do the work, if you will kindly consent to pay for his services.

No. 277. ORDER THEREON, 20th September 1872, No. 2,229.

RAILWAY, No. 47.

ORDERED that these papers be forwarded to the Government of India, and in view of the explanation afforded of the comparative cheapness of the iron sleeper road, sanction be requested to the estimate of Rupees 12,87,381 for renewing the line between Muddikerry and Beypore, which was laid before the Government of India with letter, No. 809, dated 21st March 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 278. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 20th September 1872, No. 2,230.

RAILWAY, No. 48.

SIR,—I am now directed to acknowledge the receipt of your letter, No. 518 G. R., dated 9th April 1872, calling for further information in regard to the comparative cost of the maintenance of that portion of the Madras Railway Company's line which has already been renewed with iron-bowl sleepers, before according sanction to the estimate of Rupees 12,87,381 which was forwarded with Colonel Carpendale's letter of the 21st March 1872, No. 809.

2. From the papers now submitted it will be observed that although the figures necessary for instituting the comparison required in paragraph 3 of your letter under reply are not obtainable, the Chief Engineer of the Company shows that the cost of maintaining the iron road amounts to Rupees 492 per mile against Rupees 1,560 for the wooden road; and though unable to controvert the apparent result of the use of creosoted fir sleepers on the Great Southern of India Railway which points to the life of such a sleeper reaching thirteen years, is strongly opposed to their being tried within the influence of the West Coast climate, which is known to be more injurious than that to which the Great Southern of India line is exposed. I am accordingly to request that, under the explanations now submitted, the early sanction of the Government of India may be communicated to the estimated expenditure.

3. The allocation to Capital will be that previously reported.

No. 279. Read the following letter from the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 3rd September 1872, No. 1,221 :—

THE Collector of the Kistna District, in July 1871, submitted a bill for Rupees 2,406-0-3 on account of compensation for lands taken up for Public Works and for loss of produce in that district; but as no information was given of the particular works for which the lands had been taken up, the Collector was called upon to supply the omission.

2. With his letter, No. 1,853, dated 22nd July 1872, the Collector forwarded the accompanying statement of compensations for lands, which it will be seen comprises " Irrigation works" and " Communications" having allotments provided for them from Provincial funds. As, however, the description of each class of works indicates that funds should be provided for them from " Imperial" and " Local Fund" services respectively, I beg to be favored with the orders of Government on the subject.

Vide G. O., No. 255, dated 26th April 1872.

3. I would venture to suggest that in all future applications of the nature referred to, Collectors be requested to afford particulars of works in view to appropriations of funds being given from the proper sources.

Abstract of compensation to be paid in the Kistna District on account of lands taken up for Public Works and for loss of crops.

Range.	Works.	Money payment for lands taken up.	Amount of compensation for loss of crops.	Total.	Remarks.
		RS. A. P.	RS. A. P.	RS. A. P.	
	Agricultural.				
Western Delta, K.	Gunniaya channel at Kavoor ...	......	0 8 4	0 8 4	
Do. ...	Drainage channel at China Pulivaru	......	9 15 2	9 15 2	
Do. ...	Karakatta channel at Donapudy	......	27 15 5	27 15 5	
Do. ...	Drainage channel at Bhattiprole	18 12 0	5 10 0	24 6 0	
Do. ...	Karakatta channel at Chatragadda ...	70 3 4	7 14 0	78 1 4	
Do. ...	Karkatta channel at Kamarajgadda ...	92 1 4	129 10 0	221 11 4	
Do. ...	Do. at Potumerka	......	9 4 2	9 4 2	
Do. ...	Do. at Kaitapally	......	48 0 0	48 0 0	
Do. ...	Drainage channel at Peda Kondoor	......	7 2 4	7 2 4	
Do. ...	Do. at Godavurru Agraharum	......	33 6 2	33 6 2	
Do. ...	Kummamur channel at Karamchadu	......	20 14 6	20 14 6	
Do. ...	Drainage channel at Sreranaghrum Agraharum	......	13 2 0	13 2 0	
Do. ...	Do. at Mannara	......	23 9 4	23 9 4	
Do. ...	Do. at Annavarapadu	......	2 14 0	2 14 0	
Do. ...	Irrigation channel at Etem ...	......	2 8 10	2 8 10	
Do. ...	Commamore channel at Brahmanakodoor	......	5 4 0	5 4 0	
Do. ...	Muttury channel at Chebrole	......	8 13 9	8 13 9	
Do. ...	Drainage channel at Vetapalem	......	58 10 4	58 10 4	
Eastern Delta, K.	Irrigation channel at Tennaru	......	6 4 0	6 4 0	
Do. ...	Ryves' channel at Uppuloor ...	......	13 1 0	13 1 0	
Do. ...	Irrigation channel at Boddapadu	3 5 4	......	3 5 4	
Do. ...	Do. at do.	36 10 8	......	36 10 8	
Do. ...	Pullaru channel at do.	......	0 4 0	0 4 0	
Do. ...	Do. at China Pulipaka ...	6 9 0	3 7 6	10 0 6	
Do. ...	Irrigation channel at do.	......	2 15 6	2 15 6	
Do. ...	Do. at do.	......	0 13 6	0 13 6	
Do. ...	Karakatta channel at Chodavaram ...	......	9 4 0	9 4 0	
Do. ...	Pulleru channel at Proddutoor	2 3 0	1 4 4	3 7 4	
Do. ...	Side channel at Vallur Sumut	27 14 8	......	27 14 8	
Do. ...	Do. at China Pulipaka	61 4 0	......	61 4 0	

Abstract of compensation to be paid in the Kistna District on account of lands taken, etc.—(Concluded.)

Range.	Works.	Money payment for lands taken up. (RS. A. P.)	Amount of compensation for loss of crops. (RS. A. P.)	Total. (RS. A. P.)	Remarks.
	Agricultural.—(Concluded.)				
Eastern Delta, K.	Side channel at Boddapadu	115 3 4	......	115 3 4	
Do.	Do. at Penamakoor village in Chavendramuttah	129 1 0	......	129 1 0	
Do.	New Polarazucodu at Sankarashanapuram Agraharum	......	7 13 4	7 13 4	
Do.	Bantumilly channel at Chennoor	38 8 8	69 14 0	108 6 8	
Do.	Do. at Bodagunta	182 8 0	15 11 4	198 3 4	
Do.	Do. at Kavutarum	......	25 1 11	25 1 11	
Do.	Do. at do.	......	37 2 5	37 2 5	
Do.	Do. at do.	......	22 3 10	22 3 10	
Do.	Do. at do.	......	63 0 8	63 0 8	
Do.	Do. at do.	21 2 4	......	21 2 4	
Do.	Sellapudy channel at Chavutapally	221 4 0	......	221 4 0	
Do.	Chattram channel at Angalloor	15 1 8	17 3 5	32 5 1	
Do.	Vinjaram channel at Syamalambapuram Agraharum	......	29 10 6	29 10 6	
Do.	New branch channel at Dintacurra	24 2 8	......	24 2 8	
Do.	Do. at Kanumarala	20 13 4	12 4 0	33 1 4	
Do.	Irrigation channel at do.	53 15 4	15 13 6	69 12 10	
Do.	Do. at Kamalapuram	40 8 4	......	40 8 4	
Do.	Pulleru channel at Pamaru	......	6 3 2	6 3 2	
Do.	Widening the Pulleru at do.	......	1 1 0	1 1 0	
Do.	Culdindy channel at Chevoor	......	38 13 4	38 13 4	
Do.	Tummedy channel at do.	23 5 4	......	23 5 4	
Do.	New Branch channel at Vinnakata	67 11 4	......	67 11 4	
Do.	Do. at do.	10 1 8	......	10 1 8	
Do.	Do. at Betavole	12 4 8	......	12 4 8	
Do.	Kykalur channel at Sobhanabrikuram	......	9 11 6	9 11 6	
Do.	Lellapudy Irrigation channel at Lallapudy	11 15 8	......	11 15 8	
Do.	Drainage channel at Singarayapallem	6 12 4	......	6 12 4	
Do.	New branch channel at Cherumpully Agraharum	......	93 0 0	93 0 0	
Do.	Chuttrum channel at do.	15 6 8	......	15 6 8	
Do.	Irrigation channel at Mantana	30 11 8	3 11 6	34 7 2	
Do.	Embankment channel at Lankapally	......	20 12 8	20 12 8	

Do. ...	New branch channel at Nandamoor...	......	1 9 0	1 9 0
Do. ...	Irrigation channel at Godavurra	36 0 8	......	36 0 8
Do. ...	New branch channel at Kalavapamula	45 3 4	1 4 6	46 7 10
	Total Irrigation...	1,440 13 4	944 9 9	2,385 7 1
	Communication.			
Eastern Delta ...	Gudivada road at Kankipad	......	1 9 10	1 9 10
Do. ...	Salt road at Janardanapuram	5 1 8	15 7 6	20 9 2
Western Delta ...	Bapetta road at Chundoorpally	2 11 4	......	2 11 4
Nundigam ...	Hyderabad road at Nundigama	......	1 14 10	1 14 10
	Total Communication...	7 13 0	19 0 2	26 13 2
	Deduct as per G. O., No. 255, dated 26th April 1872...	......	......	6 4 0
				20 9 2
	Total as charged in the Bill ..	......	......	2,406 0 3

(Signed) D. H. TRAIL, Captain, R.E.,
Officiating Controller of Public Works Accounts.

No. 280. ORDER THEREON, 20th September 1872; No. 2,231.

IRRIGATION, No. 13.

COMMUNICATED to the Revenue Department, with reference to the orders in that department, No. 116, dated 16th April 1872.

2. The sum of Rupees 2,385-7-1 shown to be due on account of land taken up for Irrigation works in the Kistna District will be charged by the Superintending Engineer of the 2nd Division to the particular works concerned; the sum due for land taken up for "Communications" will remain as a charge against "Provincial Services."

3. The necessary orders on paragraph 3 of the Controller's letter will be issued in the Revenue Department.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 281. Read the following papers :—

Proceedings of the Madras Government in the Judicial Department.

Sanctioning plan and estimate for the erection of four wards in the vicinity of the new Jail at Madura for the accommodation of Civil Debtors, and authorizing the Accountant-General to transfer the sum of Rupees 4,360 to the Public Works Department for the early execution of the work. } (Here enter No. 1,143, dated 21st August 1872).

MEMORANDUM.

THE Chief Engineer of the Department Public Works has the honour to intimate his opinion that the dimensions of the buildings for accommodation of Civil Debtors at Madura, sanctioned in G. O. of the Judicial Department, No. 1,143 of 21st August, are such as to require the use of brick-in-chunam walls, and of four tie-beams in each ward instead of two.

2. He accordingly recommends an increase to the estimate for each ward of Rupees 260, and of the total charge to Rupees 5,400.

OOTACAMUND, 18*th September* 1872. (Signed) G. W. WALKER, Colonel, R.E.,
Chief Engineer, Public Works Department.

No. 282. ORDER THEREON, 20th September 1872, No. 2,232.

CIVIL WORKS, No. 19.

IN accordance with the Chief Engineer's recommendation, His Excellency the Governor in Council revises the

sanction accorded in the Judicial Department, involving an additional transfer of Rupees 1,040 to the credit of the Public Works Department from the balance available from Provincial Funds.

2. The Superintending Engineer of the 8th Division will proceed with the work at once.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 283. Read the following Proceedings of the Board of Revenue, dated 26th August 1872, No. 1,693 :—

Read the following letter from the Acting Collector of North Arcot, to the Secretary to the Board of Revenue, dated Palmanair, 5th August 1872, No. 344.

I HAVE the honour to submit my report on the operations of the Public Works Department for the official year 1871-72.

2. The annexed statement exhibits the total expenditure of the year reported as compared with that of 1870-71.

Works.	Expenditure in 1870-71.	Expenditure in 1871-72.	Difference.		Estimate of 1871-72.
			Increase.	Decrease.	
New.	RS.	RS.	RS.	RS.	RS.
Irrigation	26,945	13,318	......	13,627	......
Communications	......	......	......	......	......
Buildings	75,729	40	......	75,689	......
Total...	1,02,674	13,358	......	89,316	......
Repairs.					
Irrigation	96,952	57,335	......	39,617	......
Communications	26,107	......	......	26,107	......
Buildings	4,379	1,713	......	2,666	......
Total ..	1,27,438	59,048	......	68,390	......
Grand Total...	2,30,112	72,406	......	1,57,706	......
Net Decrease...	....	....	......	1,57,706	81,700

Irrigation Work, New.—A sum of Rupees 13,318 was spent on Irrigation new works, the most important of which are given below :—

		RS.	A.	P.
1.	Strengthening the second apron to Allibad dam	2,422	0	0
2.	Constructing a tunnel of two vents, 4½ feet span each, on Annadana Chuttrum road	248	6	1
3.	Improving the Polur Supply Channel	5,650	0	0
4.	Improving the Supply Channel to the Sishamungalam tank in the Arni Jaghire	3,000	0	0

Of the above-named four works, Nos. 1 and 2 were completed during the year. Nos. 3 and 4 are still incomplete.

Irrigation Repairs.—A sum of Rupees 57,335 was expended under this head. A list of the principal Irrigation works repaired during the year is herewith sent.

Communications, New and Repairs.—No expenditure was incurred under these heads, all the roads having been transferred to the charge of the Local Fund Board, constituted under Act IV. of 1871.

Buildings, New.—A small sum of Rupees 40 only was expended on Military buildings.

Buildings, Repair.—Of Rupees 1,713 shown under this head, Rupees 1,627 were laid out in the repairs of Military buildings at Vellore town, and the remainder in repairing the Post Office at Arconum.

3. The Irrigation works in the district were generally only in tolerably good working order during the year under report, and a very large number of them breached during the late storm, for the restoration of which, prompt steps are being adopted, so far as the preparation of estimates is concerned; but it will require a large outlay of money by the State to restore the Irrigation works to a really efficient condition.

4. The usual statement showing the condition, etc., of the several roads lately classed as Imperial is not transmitted, as the distinction has been abolished and all the roads have been transferred to the Local Fund Board.

THE expenditure in the North Arcot District on Public Works during the year 1871-72 showed a falling off of Rupees 1,30,000, excluding roads which were transferred to Local Funds.

2. In 1870-71 upwards of 2 lakhs were spent; in 1871-72 Rupees 81,700 only were estimated for and of that only Rupees 72,406 were spent.

3. The chief falling off was in buildings. Owing to the completion of the Central Jail at Vellore and other buildings against Rupees 75,700 in 1870-71, there is only Rupees 40 in 1871-72. In Irrigation New Works the grant was reduced one-half from 26,900 to 13,300, and in Repairs it was reduced from Rupees 96,950 to 57,340.

4. So very great a fluctuation in the sums laid out on Public Works cannot but have a bad effect in the labour market of the district, and the effect must also be to raise the proportion of the cost of superintendence in an undue degree.

5. The wide-spread destruction caused by the storm in May last will, of course, necessitate a greatly increased expenditure during the current year.

No. 284. ORDER THEREON, 20th September 1872, No. 2,233.

IRRIGATION, No. 14.

COMMUNICATED to the Superintending Engineer of the 4th Division, who will ascertain and report at an early date the causes which led to the surrender of such large amounts of Agricultural allotments as those recorded in G. Os. Nos. 5 of 4th January, and 516 of 29th February 1872. He will state whether Range Officers neglected to estimate for work, or the

Superintending Engineer, to supply the necessary funds; and in the latter case will report the causes of such action so far as they can be ascertained.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 285. Read the following Endorsement of the Consulting Engineer for Railways, dated Madras, 3rd September 1872, No. 468:—

From the Agent of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Negapatam, 9th August 1872, No. 4,633.

HEREWITH I have the honour to forward the statement showing establishment of the Engineering Department on construction for the half-year ending the 31st December 1872, called for in your letter No. 281, dated the 17th ultimo.

From the Agent of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Negapatam, 23rd August 1872, No. 4,657.

WITH reference to your letter No. 326, dated the 13th August, I have the honour to return herewith the statement of sanctioned and proposed (Chief Engineer's) establishment, with the desired information entered thereon.

GREAT SOUTHERN

Southern Extension,

Statement showing sanctioned and proposed

Establishment as sanctioned.				Designation.	Establishment as it stood on 1st January 1872.			Present stren (30th	
Date of sanction.	No.	Rate of salary.	Amount.		No.	Rate of salary.	Amount.	No	Rate of salary.
		RS. A. P.	RS. A. P.	*Engineers.*		RS. A. P.	RS. A. P.		RS. A. P.
Government Order, No. 803 of 21st March 1872.	1	1,800 0 0	1,800 0 0	Chief Engineer...	1	1,800 0 0	1,800 0 0	1	1,800 0 0
	4	818 3 0	3,272 12 0	Assistant Engineers, 1st Class ...	1	818 3 0	818 3 0	2	818 3 0
	4	636 6 0	2,545 8 0	Do., 2nd Class ...	2	636 6 0	1,272 12 0	3	636 6 0
	7	454 9 0	3,181 15 0	Do., 3rd Class ...	4	454 9 0	1,818 4 0	6	454 9 0
		Total...	10,800 3 0			Total...	5,709 3 0		
				Chief Engineer's Office.					
	1	350 0 0	350 0 0	Manager	1	350 0 0	350 0 0	1	350 0 0
	1	120 0 0	120 0 0	Clerk	...	......	......	...	......
	1	100 0 0	100 0 0	Accountant	...	......	......	...	......
	...	......	770 0 0	Clerks and Accountants	...	......	183 8 9	...	......
	...	......	70 0 0	Cash-keeper	...	......	......	1	50 0 0
	...	......	60 0 0	Apothecary	...	......	22 9 3	1	50 0 0
	...	......	200 0 0	Draughtsmen and Moochee ...	...	......	195 8 0	...	......
	...	......	104 0 0	Office Cash Peons, Sweeper, etc ...	...	......	58 0 0	...	......
		Total...	1,774 0 0			Total...	809 10 0		
				Engineering Workshop.					
	1	300 0 0	300 0 0	Foreman	...	......	......	...	......
	1	80 0 0	80 0 0	Assistant Foreman	...	......	......	1	35 0 0
	...	......	275 0 0	Clerks, Accountants, Time Keeper, and Timber Measurers ...	...	......	10 0 0	...	......
		Total...	655 0 0			Total...	10 0 0		
				Engineering Stores.					
	1	200 0 0	200 0 0	Storekeeper	...	......	70 0 0	1	100 0 0
	1	80 0 0	80 0 0	Assistant Storekeeper	...	......	......	...	......
	...	......	370 0 0	Clerks and Accountants	...	......	......	...	......
	12	......	84 0 0	Lascars	...	......	......	4	......
		Total...	734 0 0			Total...	70 0 0		
				14 *Districts.*					
	11	120 0 0	1,320 0 0	Engineering Assistant	...	......	380 0 0	5	......
	28	......	3,500 0 0	Inspectors	...	......	......	8	......
	...	......	1,260 0 0	Writers and Accountants... ...	...	......	49 5 8	7	......
	14	50 0 0	700 0 0	Cash-keepers	...	......	30 0 0	1	50 0 0
	14	65 0 0	910 0 0	Storekeepers	...	......	......	7	......
	14	50 0 0	700 0 0	Apothecary	2	50 0 0	100 0 0	6	......
	...	......	560 0 0	Inspectors' Writers	...	......	......	1	15 0 0
	...	......	336 0 0	Cash Peons	...	......	......	2	7 0 0
	...	......	294 0 0	Store Peons	...	......	......	...	......
	...	......	672 0 0	Lascars	...	......	242 3 2	...	......
		Total...	10,252 0 0			Total...	801 8 10		
				Where required.					
	1	350 0 0	350 0 0	Sub-Assistant Engineer	...	......	......	1	350 0 0
	2	250 0 0	500 0 0	Do. do.	2	250 0 0	500 0 0	3	......
	6	......	1,560 0 0	Masonry Inspectors	1	236 6 0	236 6 0	2	......
		Total...	2,410 0 0			Total...	736 6 0		

Trichinopoly,
7th August 1872.

(Signed) W. S. BETTS,
Agent.

OF INDIA RAILWAY.

Engine ering Department.

Establishment for period ending 31st December 1872.

...th of Establishment June 1872).		Proposed strength of Establishment at 31st December 1872.				Difference between Columns 3 and 4.		Remarks.
Amount.	Total.	No.	Rate of salary.	Amount.	Total.	Increase.	Decrease.	
RS. A. P.	RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.		
1,800 0 0		1	1,800 0 0	1,800 0 0		......	......	
1,636 6 0		2	818 3 0	1,636 6 0		......	......	
1,803 1 0		4	636 6 0	2,545 8 0		742 7 0	......	
2,500 1 6		8	454 9 0	3,636 8 0		1,136 6 6	......	
	7,739 8 6				9,618 6 0	1,878 13 6		
350 0 0		1	350 0 0	350 0 0		......	......	
......		1	120 0 0	120 0 0		120 0 0	......	
......		...	......	......		......	......	
490 0 0		...	......	600 0 0		110 0 0	......	
50 0 0		1	50 0 0	50 0 0		......	......	
50 0 0		1	60 0 0	60 0 0		10 0 0	......	
230 0 0		...	......	300 0 0		70 0 0	......	
61 2 8		...	......	84 0 0		22 13 4	......	
	1,231 2 8				1,564 0 0	332 13 4		
......		1	100 0 0	100 0 0		100 0 0	......	
85 0 0		1	50 0 0	50 0 0		15 0 0	......	
70 0 0		...	......	120 0 0		50 0 0	......	
	105 0 0				270 0 0	165 0 0		
100 0 0		1	150 0 0	150 0 0		50 0 0	......	
......		1	50 0 0	50 0 0		50 0 0	......	
128 10 8		...	......	150 0 0		21 5 4	......	
27 0 0		...	......	60 0 0		33 0 0	......	
	255 10 8				410 0 0	154 5 4		
450 0 0		10	......	1,100 0 0		650 0 0	......	
561 10 8		21	......	2,100 0 0		1,538 5 4	......	
250 0 0		...	......	1,000 0 0		750 0 0	......	
50 0 0		14	......	700 0 0		650 0 0	......	
209 0 0		14	......	500 0 0		291 0 0	......	
320 0 0		14	50 0 0	700 0 0		380 0 0	......	
15 0 0		14	20 0 0	280 0 0		265 0 0	......	
14 0 0		42	8 0 0	336 0 0		322 0 0	......	
......		28	7 0 0	196 0 0		196 0 0	......	
337 3 1		98	......	672 0 0		334 12 11	......	
	2,206 13 9				7,584 0 0	5,377 2 3		
350 0 0		1	......	350 0 0		......	......	
650 0 0		3	......	650 0 0		......	......	
476 6 0		3	......	726 0 0		249 10 0	......	
	1,476 6 0				1,726 0 0			

(Signed) D. LOGAN,
Chief Engineer.

G. O., No. 1,762, dated 25th July 1872.

SUBMITTED to Government in continuation of my endorsement, No. 353, dated 5th July 1872.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 286. ORDER THEREON, 20th September 1872, No. 2,234.

RAILWAY, No. 49.

ORDERED that these establishment lists be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 287. (DOCKET No. 2,235, dated 20th September 1872.)

COPY of the above forwarded to the Government of India in continuation of letter, No. 1,763, dated 25th July 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 288. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 467:—

WITH reference to the Order of Government No. 1,806, dated 30th July 1872, I have the honour to submit a letter* from the Agent of the Madras Railway Company relating to the submission of the audited weekly traffic returns.

*No. 586, dated 16th August 1872.

2. The Chief Auditor, while promising every exertion to render the returns promptly, states that it will be impossible to furnish them within three weeks in order to insure their reaching the Government of India in the fourth week; but he hopes to be able to submit them during the fourth week.

3. Under the circumstances explained in Mr. Church's letter, it is scarcely possible to expect anything better at present, but I shall not lose sight of the matter in the hope of being able to effect an improvement hereafter.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 16th August 1872, No. 586.

WITH reference to your letter of the 8th instant, No. 636, and to G. O., No. 1,806, dated 30th July, I have the honour to enclose you the copy of a letter* which I have this morning received from the Chief Auditor upon the subject of the submission of the audited traffic returns of this Railway.

* No. 713, dated 15th August.

2. You will perceive that Mr. Church promises that every exertion shall be made to render the returns promptly, though he does not consider that it will be possible to furnish you with the audited traffic statements within three weeks from the close of the periods to which they relate. The Chief Auditor, however, hopes to be able to submit the returns on a day in the fourth week.

From the Chief Auditor, to the Agent and Manager of the Madras Railway Company, dated Madras, 15th August 1872, No. 713.

REFERRING to the Consulting Engineer's letter No. 636, dated 8th instant, I beg to inform you that it has been our earnest desire to get our audited traffic accounts prepared as soon as possible in order that they might be forwarded to the Government of India by the earliest date practicable.

2. Since the date of the Resolution, No. 1,608, dated 1st September 1871, the most we have been enabled to do towards meeting the requisition of the Consulting Engineer, namely, to furnish the returns within three weeks from the close of the periods to which they relate, has been to send them on the 26th day.

3. I was in hopes that on the arrival of an Assistant from England with the latest experience of the English clearing-house, and of the practice on the best managed English Railways, we should have been able to see our way to a more prompt preparation of our audited traffic, and since the arrival of Mr. Kinselle we began to find that the arrears into which we had fallen in the early part of this year, consequent on a change in the station accounts, referred to in my letter No. 703, dated 11th July 1872, but more particularly in consequence of a misinterpretation on the part of the Great Indian Peninsula of the agreement entered into between the two Companies, both of which acted as a drag on our audit, were on the eve of being cleared up. But unfortunately at this very juncture Mr. Kinselle ran away from Madras in sheer fright of the climate and of dengue fever.

4. During the time Mr. Kinselle was with us many opportunities were taken both by Mr. Atkinson and myself to ascertain whether our system was in any way behind the practice on the best managed lines in England, and so far as Mr. Kinselle's experience carried him he informed us that it was identically the same as on English lines, excepting that we dealt with our traffic returns in more detail than they do in England. This, in my opinion, is all in favour of our system, and under no circumstances could I recommend a departure from it.

5. It is, however, doubtful whether we should ever have been able, even with the latest experience of traffic audit as conducted in England, to render our weekly audited traffic returns within the time prescribed by the Consulting Engineer, namely, "*within* three weeks," but I have very little doubt about our treading very closely on that limit.

Our returns from stations are received, say on the 6th day after date, our slip statement of traffic is rendered a week after, and our traffic may be completely audited and booked in another week. It has then to be abstracted from the books and the percentages and mileage calculated; so that the shortest period in which it can be prepared is on a day in the fourth week. This, of course, is on the supposition that all goes on smoothly, that every station renders its returns punctually, and that all information necessary for the completion of the week's traffic is forthcoming. But circumstances will arise such as those referred to in the early part of this letter which serve to upset the best laid plan and system.

No. 289. ORDER THEREON, 20th September 1872, No. 2,236.

RAILWAY, No. 50.

ORDERED that these papers be forwarded for the information of the Government of India, with reference to their Proceedings communicated with the under-mentioned orders:—

G. O., No. 2,415, dated 21st September 1871.
" " 1,806, " 30th July 1872.
" " 1,940, " 14th August "

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 290. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 20th September 1872, No. 2,237.

RAILWAY, No. 51.

From Government of India, No. 1,608, dated 1st September 1871.
Do. do., dated No. 1,068, 12th July 1872.
Do. do., dated „ 479, 30th „ „

SIR,—With reference to the correspondence noted in the margin calling attention to delay in the submission of the weekly audited traffic returns on Guaranteed Railways and pointing out the necessity for more promptitude in future, I am directed to forward the accompanying letters from which it will be observed that it is represented by the officers of the Madras Railway as being impracticable, under present circumstances, to forward the returns at a period earlier than the fourth week after that to which they relate. The Consulting Engineer will, however, keep the matter in view and endeavour to effect an improvement hereafter.

No. 291. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Chettycolum, 20th August 1872, No. 357:—

1 Estimate.
1 Plan.
1 Specification.
1 Survey Sketch of the site showing out-houses.

WITH reference to your memorandum No. 104, dated 11th July 1872, I have the honour to submit a fresh plan and estimate, amounting to Rupees 790, accompanied by a specification for converting the buildings known as the Native Garrison Hospital and Surgery at Trichinopoly into quarters for the Apothecary duly approved by His Excellency the Commander-in-Chief. The uses to be made of the various parts of the buildings are duly noted on the plan, and the existing out-houses, etc., are shown on the accompanying survey sketch of the site. The amount of the estimate being in excess of the proximate amount given by the Executive Engineer by Rupees 190, is stated by him to be due to compound walls with gates, which were not originally contemplated, having been provided for in the estimate.

No. 292. ORDER THEREON, 20th September 1872, No. 2,238.

MILITARY WORKS, No. 11.

HIS Excellency the Governor in Council sanctions the plan with estimate, amounting to Rupees 790, for converting the Native Garrison Hospital and Surgery at Trichinopoly into quarters for the Apothecary, and resolves to allot the sum of Rupees 400 credited to the Reserve in G. O., No. 1,847, dated 6th August 1872, for the work, leaving the question of supplementing the grant to be considered hereafter. The work will meanwhile be completed; Major Hasted will report whether he can provide the balance of the estimate from the grant of Rupees 1,700 for Minor New Works in Trichinopoly.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 293. From the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 14th August 1872, No. 1,049.

I HAVE the honour to forward Mr. Brock's report on the Annual Appropriation and Outlay Accounts of the Madras Presidency for the year 1871-72.

———

From the Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort Saint George, 10th August 1872, No. 1,023.

SIR,—I have the honour to submit the Annual Appropriation and Outlay Accounts of the Madras Presidency for the year 1871-72.

2. The three great sources from which this department was supplied with funds during the year under review were the following :—

(1.) *Imperial*—Ordinary and Extraordinary—comprising allotments made from the revenues of the country, and borrowed Capital specially assigned to large Agricultural Works of a reproductive character.

(2.) *Provincial*—made up of part of the ordinary revenues transferred to this Government for final appropriation, and of receipts credited to buildings, etc., now classed under the head "Provincial."

(3.) *Local*—comprising collections from the Road Cess, and the Jungle Conservancy, Educational, Port, Canal, Nanul Grass, Bungalow, Endowment, Cattle Pound, etc., Funds.

3. As it is for many reasons desirable that the transactions appertaining to each of these heads should be kept separate and distinct in this report, I have reviewed them accordingly, and trust that the arrangement will meet with the approval of Government.

4. Excluding the provision for "London Supplies," namely, Rupees 52,300, the original allotment from Imperial Funds was Rupees 50,28,000. Reductions aggregating Rupees 30,060 were made during the year, leaving the grant on the 31st March 1872 at Rupees 49,97,940. The amount withdrawn was disposed of partly* by transfer to Bombay for expenditure on telegraph works in that Presidency, and partly by an addition† to the provision‡ in the Madras Budget for London Supplies.

* To the extent of Rupees 27,000.

† Of Rupees 3,060.

‡ Rupees 52,300.

5. Subjoined is an Abstract of the grants as originally made, and as they actually stood at the close of 1871-72 :—

Statement showing the Imperial allotments on the 1st April 1871, and as they stood on the 31st March 1872.

Heads.	As they stood on the 1st April 1871.			As they stood on the 31st March 1872.		
	New Works.	Repairs.	Total.	New Works	Repairs.	Total.
Ordinary.	RS.	RS.	RS.	RS.	RS.	RS.
Military	2,20,000	2,20,000	4,40,000	2,12,229	2,27,771	4,40,000
Agricultural... ...	2,94,200	12,00,000	14,94,200	2,85,896	12,17,264	15,03,160
Civil Buildings ...	1,36,000	4,000	1,40,000	1,04,264	5,676	1,09,940
Establishments ...	....	....	8,40,000	....	....	8,53,000
Tools and Plant ...	....	....	17,700	....	....	33,400
Railway Companies...	....	....	2,45,300	....	....	2,45,300
Madras Irrigation and Canal Company ...	....	....	55,800	....	....	18,140
Total, *Ordinary*...	....	....	32,33,000	....	....	32,02,940
Extraordinary.						
Agricultural ...	15,75,000	....	15,75,000	15,12,000	....	15,12,000
Establishment ...	....	....	2,00,000	....	....	2,63,000
Tools and Plant ...	....	....	20,000	....	....	20,000
Total, *Extraordinary.*	....	....	17,95,000	....	....	17,95,000
Grand Total...	....	....	50,28,000	....	....	49,97,940

6. Apart from the transfers already noticed in paragraph 4 above, which were made from the assignment to "Civil Buildings," the most important diversion of funds ordered during the year against "Ordinary" was the withdrawal of a sum of Rupees 37,660 from the appropriation sanctioned under the head State outlay in connection with the works of the Madras Irrigation and Canal Company, and the transfer of that amount finally, as follows :—

		RS.
To Establishment, Ordinary	... ...	13,000
To Tools and Plant, do.	... ...	15,700
To Agricultural, do.	... ...	8,960
	Total...	37,660

No. 451-A. B. and R, dated 21st Dec. 1871.
,, 108-A. I., dated 15th June 1871.
Endorsements on the applications of this Government No. 3,196, dated 19th December 1871, and No. 246, dated 25th January 1872.

These transfers having been regularly reported to, and approved of by, the Government of India in their orders as per margin, it is unnecessary to enter here into any detailed explanations.

7. Under "Extraordinary" the only transfer which was made consisted of the diversion of a sum of Rupees 63,000 from the head of Works to that of Establishments, to cover survey charges; full particulars of which were laid before the Supreme Government.

8. The total expenditure recorded in the Public Works Books under "Ordinary" and "Extraordinary" is as follows:—

Heads.	New Works.		Repairs.		Total.	
	Grant.	Outlay.	Grant.	Outlay.	Grant.	Outlay.
	RS.	RS.	RS.	RS.	RS.	RS.
Military	2,12,229	2,10,667	2,27,771	2,23,485	4,40,000	4,34,152
Civil Buildings ...	1,04,264	32,310	5,676	2,855	1,09,940	35,165
Agricultural... Ordinary...	2,85,896	2,38,317	12,17,264	11,22,500	15,03,160	13,60,817
Agricultural... Extraordinary ...	15,12,000	5,63,857	......	......	15,12,000	5,63,857
Total for Works...	21,14,389	10,45,151	14,50,711	13,48,840	35,65,100	23,93,991
Add charges under "Profit and Loss" (Rupees 3,513) and deduct decrease in Stock Balances (Rupees 7,321). Net reduction					......	3,808
Total...					35,65,100	23,90,183
Establishment ... Ordinary					8,53,000	5,89,994
Establishment ... Extraordinary					2,63,000	1,97,131
Tools and Plant... Ordinary					33,400	17,882
Tools and Plant... Extraordinary					20,000	6,532
State outlay on Railways					2,45,300	94,534
Do. in connection with the Madras Irrigation and Canal Company...					18,140	12,176
Grand Total...					49,97,940	33,08,432

9. Excluding "State outlay" in connection with Guaranteed Companies, the expenditure on Public Works Proper during the past year was less than grant by Rupees 15,32,778. Including "State outlay," the expenditure fell below allotment by Rupees 16,89,508. The following paragraphs explain, as far as possible, the causes which led to the short expenditure under each head.

10. The grant under "Military" for Original Works was Rupees 2,12,229, of which Rupees 2,10,667 were expended, leaving a balance of Rupees 1,562, which represents, besides numerous small savings, (1) a short outlay of Rupees 1,248 on the Rest-house at Ghooty, final payments for which were deferred pending the result of a reference to the Superintending Engineer of the 3rd Division, and (2) an unappropriated balance from the funds at the disposal of that Officer. Under "Repairs, Military," the outlay was Rupees 2,23,485 against an assignment of Rupees 2,27,771, the difference being Rupees 4,286. Part of this short outlay occurred in the Bellary District, where there were several small savings on completed works, and the Superintending Engineer moreover left a balance of Rupees 733 unappropriated on the 31st March last. At the Presidency also there was a saving on allotment of about Rupees 2,000, of which Rupees 1,580 represent the provision made for the work as per margin not undertaken in 1871-72 in consequence of sanction to the estimate and grant having been accorded so late as the 18th March, and the balance is the saving on the allotment for house-rent to Military and Medical Subordinates.

Repairs to the Godown, Hospital Branch, of the Commissariat Department.

11. Turning to "Civil Buildings," it will be observed that out of a total assignment of Rupees 1,04,264 to New Works, only Rupees 32,310 were utilized. The largest savings were on the under-mentioned works:—

			RS.
(1.)—Telegraph Office at Cocanada		... ...	5,795
(2.)—	Do.	at Bellary	8,000
(3.)—	Do.	at Madras	50,000
(4.)—	Do.	at Negapatam	6,830

12. The short expenditure noted against the Telegraph Office at Madras was due to the plans and estimates not having been submitted and sanctioned. In the other cases, delay in fixing and handing over the sites is urged as a reason for the non-utilization of the available funds. The site for the Telegraph Office at Negapatam was not handed over to the Range Officer till February, and that for a similar building at Bellary was not fixed till March 1872. Under "Repairs, Civil Buildings," the expenditure is also disproportionate to the grant, only Rupees 2,855 having been laid out against a grant of Rupees 5,676. In the Vizagapatam District an allotment of Rupees 700 was made for the Post Office at Nursipatam, but only Rupees 73 were spent owing to the late date (February 1872) on which sanction to the estimate was communicated to the Range Officer. In eight other districts, the small allotments made for postal and telegraph buildings remained wholly unutilized. A list of these is appended:—

	Grants.
Godavery ...	180
Kistna ...	456
Nellore ...	180
Chingleput ...	180
South Arcot ...	100
Tanjore ...	180
Trichinopoly ...	150
Tinnevelly ...	200
Total ...	1,626

The Government may perhaps consider it necessary to call for explanation in respect of these unspent balances.

13. The modified grant under New Works, Agricultural, Ordinary, was Rupees 2,85,896, against which the recorded expenditure is Rupees 2,38,317, or Rupees 47,579 less than the actual available funds. The largest items of short outlay appear against the undermentioned works:—

	Short outlay. RS.
(1).—*Godavery District.*—Side channel from the Madapad Lock on the south side ...	1,697
(2)—*Kistna District.*—Channel, with subsidiary works, for the better supply of the Buddam and Alloor lands ...	3,879
(3).—*Do.*—Bridge across the Ellore High Level Canal ...	1,495
(4).—*Do.*—Restoration of the Peddacuncherla tank ...	2,212
(5).—*Chingleput District.*—Chembrumbaukam Tank Project ...	8,602
(6).—*Salem District.*—Improvements to the Chinnakistnapooram tank.	1,667

14. The Range Officer has furnished no explanation in respect of Item No. 1; but it is probable that the progress of the work was delayed by the presence of

water in the channel. The allotment for the work entered as Item No. 2 was not fully spent, owing to scarcity of labour towards the close of the year. The cause of short outlay on Item No. 3 is identical with that given in the case of Item No 1. Sickness amongst the workmen, and the consequent dispersion of the labourers, are urged as reasons for the non-utilization of the entire grant for Item No. 4. With respect to Item No. 5, it is alleged that the absence of an allotment until July, and the dispersion of the workmen before that date, coupled with the short working season which remained before the tank filled (10th October 1871), tended to retard the prosecution of the works. After October, the population of the neighbouring villages were employed on the cultivation of their fields, so that labour was scarce. The saving on the last item is owing to the failure of the Contractor to keep to his engagements. Apart from these items, and other small savings on numerous petty works, there were unappropriated balances in the hands of Superintending Engineers on the 31st March last from the grants for Minor New Works, Agricultural, at their disposal. A list of these is given in the margin.

	RS.
Godavery	1,499
Cuddapah	1,499
South Arcot	815
Tanjore	2,050
Madura	2,564
Tinnevelly	2,155

15. The final appropriation to "Repairs, Agricultural," was Rupees 12,17,264, of which Rupees 11,22,500 were utilized, thus leaving an unspent balance of Rupees 94,764 at the close of the year. An examination of the detailed accounts shows that this balance includes the following sums which remained unappropiated by Superintending Engineers on the 31st March :—

Districts.	Short outlay.	Unappropriated by Superintending Engineers.
	RS.	RS.
Ganjam	9,429	1,402
Vizagapatam	5,933	Full amount.
Godavery	10,196	6,038
Kistna	8,215	....
Cuddapah	4,129	2,237
Bellary	5,472	723
Kurnool	8,134	....
North Arcot	3,772	....
South Arcot	5,828	Full amount.
Tanjore	5,662	Do.
Trichinopoly	3,349	Do.
Madura	8,862	144
Tinnevelly	14,630	755

16. The short outlay against actual appropriations, *i.e.*, the difference between the figures entered in columns 2 and 3 of the foregoing Abstract, is thus accounted for by Range Officers :—

	RS.	
Ganjam	8,027	Famine Relief Works sanctioned too late in the year to admit of allotments being fully utilized.
Godavery	4,158	Late allotments, and savings on certain estimates, specially those for the maintenance of canals.

	RS.	
Kistna	8,215	Presence of water in the canals, scarcity of labour, late sanction to estimates, and late allotments.
Cuddapah	1,892	Savings on estimates, and indifference of Overseers, leading to non-utilization of available grants.
Bellary	4,749	Late sanctions, inactivity of Overseers, difficulty of procuring labour, and savings on works executed by contract.
Kurnool	8,134	Presence of water in tanks, delay in obtaining ground for earth pits, late sanctions, and, in one instance, inactivity of Range Officer.
North Arcot	3,772	Savings on various sanctioned estimates, and certain works being found unnecessary.
Madura	8,718	Changes amongst Range Officers and Taluq Overseers.
Tinnevelly	13,875	Unwillingness of villagers to undertake works, and delays in the completion of works commenced by such agency.

17. Turning to Agricultural, Extraordinary, the total outlay during the year was Rupees 5,63,857, against the modified assignment of Rupees 15,12,000. There has thus been a short expenditure of no less than Rupees 9,48,143, and the causes which led to the non-utilization of the available funds may be thus summarized :—

Districts.	Works.	Short expenditure, as compared with modified grant.	Remarks.
		RS.	
Ganjam ...	Rooshkoolia Project ...	50,000	No expenditure could be incurred in the absence of sanctioned plans and estimates, which, it is believed, are still in course of preparation.
Godavery ...	Extension of Irrigation in the Western Delta.	2,32,809	Sanction to the complete project was not received till 30th November 1871. Hence the Range Officer states that it was impossible to spend the grant.
Do. ...	Extension of Irrigation in the Eastern Delta.	1,07,963	Here also sanction to the estimatewas not communicated till May 1871.
Kistna ...	Enlargement, extension, and improvement of the channels in the Masulipatam Section of the Kistna Delta.	18,773	The chief cause of delay in the prosecution of the work was the great difficulty experienced in obtaining labour.
Do. ...	Widening the head of the Masulipatam canal for 1,000 yards from the anicut to the head of the Ellore Branch.	14,083	Scarcity of labour and the presence of water in the channel prevented the carrying on of the masonry and earthworks as expeditiously as was anticipated.
Do. ...	Enlargement and improvement of Ryves' channel and its branches, and the construction of the necessary masonry works.	8,290	This short outlay occurrred through a mistake. The Range Officer at first anticipated that the allotment of Rupees 50,000 could not be utilized, and accordingly surrendered a portion. That portion, however, was not transferred elsewhere, and hence remained at his disposal. Work to the full extent of grant was afterwards executed ; but the Range Officer, under a misapprehension, made no payment, and when the order informing him that the full assignment was available reached him, it was too late in March to arrange for a settlement of demands.

Districts.	Works.	Short expenditure, as compared with modified grant.	Remarks.
		RS.	
Kistna ...	Sloping down the banks of the main canal from the southern flank of the anicut, and enlarging the head of the main canal from Seetanagarum to Doogeralla.	19,530	Owing to water in the canal the progress of work was retarded.
Do. ...	Extension of the Commamoor channel and construction of the necessary masonry works.	45,902	Here also the presence of water in the channel prevented work being carried on till about the end of March. Hence the short outlay.
Do. ...	Excavating a new channel along the western side of the Masulipatam canal.	60	Calls for no remark.
Nellore ...	Improvements to the Survapilly channel in connection with the Pennair anicut.	20,000	Scarcity of labour, increased by certain Local Fund Roads, being in active progress, has caused this saving.
Chingleput ...	Madras Water Supply Project.	37,000	This work having been continued in 1871-72 from *Ordinary* funds, the grant from borrowed Capital was not expended.
South Arcot ...	Anicut across the Vellaur, or the Palandorai Project.	61,246	The causes of short outlay are noted in the Proceedings of Government No. 842, dated 26th March 1872. Briefly they are, carelessness in drawing up the contracts, general laxity in laying out and superintending the works, and neglect in issuing detailed instructions for the guidance of Contractors.
Tanjore ...	Regulating works for the improvement of the Cauvery.	343	Calls for no special remark.
Do. ...	Regulators for the principal branches of the Vennaur river.	5,259	Failure of the stone Contractor, and non-supply, by the Public Works Workshop, of the required regulating gear, are urged as reasons for the failure to utilize the full grant.
Do. ...	Conveying stones from Trichinopoly to the Lower Anicut.	544	Calls for no remark.
Do. ...	Cauvery and Vennaur Head Works.	1,50,000	Sanction to the estimates not having been accorded, no outlay was incurred.
Madura ...	Perryaur Project	1,00,000	(same as above)
Do. ...	Investigation of do. ...	237	Calls for no explanation.
Tinnevelly ...	Streeviguntum Anicut Project.	76,051	Work on this project was stopped on the Contractor being imprisoned. When the Contractor's accounts had been closed and adjusted, work was resumed departmentally, and operations are now progressing satisfactorily.
		9,48,090	

Districts.	Works.	Short expenditure, as compared with modified grant.	Remarks.
	Add recovery from past expenditure on the channel from Vullabhapooram to Tide Water, Kistna District.	RS. 53	
	Total Short Outlay...	9,48,143	

18. In paragraph 17 of my report which accompanied the Appropriation and Outlay Account for 1870-71, I brought specially to notice the great disproportion which was annually observable between the grant and expenditure on Extraordinary Agricultural Works, and suggested the advisability of regulating the assignments under this head for future years more with reference to the labour market and to the capabilities of the Public Works Establishment than appears to have previously been done. Unfortunately, that report did not reach the Government till after the Budget for 1871-72 had been submitted to, and sanctioned by the Government of India, and it was therefore too late to make any change. Long before the year was closed it became apparent that in some cases it would be impossible, owing to various causes, advantageously to employ the whole of the funds that had been made available, and that in others the plans and estimates could not be got ready in time to admit of sanction being communicated and active operations commenced. Amongst these latter are the Rooshkoolia and Perryaur Projects, and the Cauvery and Vennaur Head Works, on which alone grants aggregating Rupees 3,00,000 remained wholly unutilized. In the Budget for the current official year, the grants for works have been reduced to Rupees 8,77,000, against Rupees 12,00,000 in 1869-70, Rupees 18,80,000 in 1870-71, and Rupees 15,12,000 in 1871-72.

19. For Establishments, the total amount originally assigned* was Rupees 19,83,710 as follows :—

* As per letter from Government of India No. 719 A-G, dated 23rd October 1871.

	RS.
Extraordinary ...	2,63,000
Ordinary ...	8,40,000
Provincial ...	1,63,660
Local, including provision on account of Petty Establishment and East Coast Canal Special Establishment, namely, Rs. 1,20,480...	7,17,050
Total ..	19,83,710

20. These grants were subsequently modified, and, on the 31st March 1872, the allotments for Establishments stood as shown below :—

	RS.
Extraordinary ...	2,63,000
Ordinary ...	8,53,000
Provincial ...	1,63,660
Local ...	7,17,050
Total...	19,96,710

21. In my Regular Estimate for the past year, I estimated the actuals under Establishments as under:—

	RS.
Extraordinary	2,00,000
Ordinary	8,53,000
Provincial	1,63,660
Local, including Petty Establishment, etc., as per paragraph 19, namely, Rupees 1,20,480	7,17,050
Total...	19,33,710

22. This total, as compared with the actuals recorded in the annual Accounts (Rupees 19,29,239), shows an excess of only Rupees 4,471, but there is a very wide and marked difference between the distribution of the charges as appearing in those accounts, and as estimated by me. This will be more clearly seen from the following Abstract:—

——	As per Regular Estimate.	As per Annual Accounts.	Less than Regular Estimate.	More than Regular Estimate.
	RS.	RS.	RS.	RS.
Extraordinary	2,00,000	1,97,131	2,869	......
Ordinary	8,53,000	5,89,994	2,63,006	......
Provincial...	1,63,660	1,81,191	......	17,531
Local	7,17,050	9,60,923	......	2,43,873
Total...	19,33,710	19,29,239	2,65,875	2,61,404
Short Outlay...	......	......	4,471	

23. I will now proceed to explain fully the causes which led to these large differences. When the Budgets for 1871-72 were prepared, and for a long time after, namely, till the 5th December 1871, it was understood that if the full Ordinary grant for Establishments was found to be required to cover charges on account of Establishments other than Extraordinary, the assignments to that head from Provincial and Local Funds (as detailed in preceding paragraphs) were to be regarded as available. In other words, that the grants under Provincial and Local were fixed, if the share demanded from Ordinary Funds reached the provision made under that head, and that any excess requirement, over and above the total allotment from these three sources, should be met by transfer from the assignments to works under "Ordinary."

24. In December 1871, the Orders of the Government of India, dated 1st* November 1871, came to hand, and they prescribed a totally different arrangement, to suit which the grants for this Presidency had not been regulated, for while they required that charges to Establishments against each fund other than Extraordinary should be calculated with reference to the outlay on works from each source of supply, the course laid down by this Government, and followed up to the date of the Orders quoted, was that explained in the preceding paragraph. I accordingly referred the whole question,

* See Public Works Proceedings No. 3,070, dated 5th December 1871.

in a complete form, to Government in letter No. 2,306, dated 12th December 1871; but although that letter was recorded and printed at length in Financial Proceedings No. 30, dated 15th January 1872, those Proceedings contained no instructions for the guidance of this office, whereupon I drew the late Secretary's attention to the omission, and the subject having again been brought under the consideration of the Financial Department, final orders were passed in the Proceedings of that Department, No. 336, dated 20th March 1872. Those orders, however, did not reach me till the 28th March, when I explained that it was too late to take advantage of and utilize the funds, which, under its operation, became available from the Ordinary grant, for while the estimated debits to Establishments from Imperial, Provincial, and Local Funds, under the original arrangement already described, were Rupees 8,53,000, 1,63,660, and 7,17,050, the actual charges against that head of Service, under the revised ruling, have amounted to Rupees 5,89,994, 1,81,191, and 9,60,923. Had no change such as that indicated been made, the annual accounts of the year would have recorded the following distribution of the debits to Establishments, which, as compared with the Regular Estimate, give the results noted :—

——	Regular Estimate.	Actuals of the year.	Less than Regular Estimate.	More than Regular Estimate.
	RS.	RS.	RS.	RS.
Extraordinary	2,00,000	1,97,131	2,869	......
Ordinary	8,53,000	8,51,398	1,602	......
Provincial	1,63,660	1,63,660	......	......
Local	7,17,050	7,17,050	......	......
Total...	19,33,710	19,29,239	4,471	......

NOTE.—There was a saving on the actuals on account of the Local Fund Petty Establishment as compared with grant, but that saving does not materially affect the comparison.

25. The above Statement will, I trust, satisfactorily show that the Regular Estimate was most carefully prepared, and that the figures appearing therein were as near an approximation to the actuals as could be made.

26. Under "Tools and Plant," Ordinary and Extraordinary, the original grants (exclusive of London supplies) were Rupees 17,700 and 20,000, respectively. During the year additions aggregating Rupees 15,700 (see G. Os., Nos. 1,738, dated 29th June 1871, and 311, dated 1st February 1872), were made to the Ordinary grant, thus raising it to Rupees 33,400. No change was made in the allotment under Extraordinary. The actuals under each of these heads amounted to Rupees 17,882 (Ordinary), and Rupees 6,532 (Extraordinary), thus leaving a balance of Rupees 15,518 under the former, and Rupees 13,468 under the latter head. With respect to the saving under Ordinary, it is necessary to explain that up to the close of 1870-71 it was found impracticable properly to apportion the charges on account of Tools and Plant between Imperial and Local Funds, and as it was most difficult in many cases, if not absolutely impossible, to separate and distinguish between Tools required and purchased specially for works carried out from the Ordinary grant and Local Funds, respectively, the result was that an undue share of the

charges under this head of service was thrown upon the Imperial allotment. Under all the circumstances, the Government resolved (Proceedings No. 2,257, of the 5th September 1871), to treat the annual provision from Imperial* and Local Funds conjointly as a lump grant, and to restrict the appropriations only to the total allotment for each District, that is, the sum total under "Tools and Plant" in the Ordinary, Provincial, and Local Fund Budgets. They further ruled that the entire expenditure on Tools and Plant should be charged off in the Accounts of Range Officers to the Imperial assignment until the last month of the year, the necessary write-back entries being then made by debiting each Fund other than Extraordinary with its proportionate share of the outlay, calculated with reference to the expenditure on works, and crediting the Imperial allotment with the sum by which it had been temporarily overcharged. This arrangement has been strictly followed, and the result, so far as it affects the Imperial grant, will afford data in making appropriations for this and future years. The debits under "Tools and Plant" other than "Extraordinary" are as follows, as compared with available funds :—

* Ordinary.

	Grant.	Outlay.
	RS.	RS.
Imperial—Ordinary	33,400	17,882
Provincial	50,298	47,147
Local	44,386	31,254

27. The excess charge under Provincial, as contrasted with that under Ordinary and Local, respectively, is attributable to the debits raised in connection with the Workshop at Chepauk on account of (1) losses in its operations during 1871-72, and (2), the value of the machinery transferred to the Factory from Public Works Stores under the orders of the Government of India.

As regards the saving under Tools and Plant, Extraordinary, it has been already shown how far the actuals against *Works* have fallen short of the year's estimate, and it is only reasonable to conclude, as in the past official year, that this has affected the outlay on Tools and Plant. A more vigorous prosecution of works, with a larger expenditure from borrowed capital, would lead to a closer approximation of the actuals, not only under *Works*, but also under *Tools and Plant* to the assignments of each year under these heads, respectively. The following statement shows the grants made for the several districts on account of Tools and Plant, Extraordinary, and the debits raised under that head in the Annual Account :—

Districts.	Grants.	Expenditure.
	RS.	RS.
Ganjam	1,000	......
Godavery	10,000	5,968
Kistna	2,140	341
Nellore	860	30
Chingleput	1,000	......
South Arcot	1,000	193
Tanjore	2,000	......
Madura	1,000	......
Tinnevelly	1,000	......
Total...	20,000	6,532

28. Under "Profit and Loss" the charges amount to Rupees 3,513. The details are as under, as compared with the preceding four years :—

Items.	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.
	RS.	RS.	RS.	RS.	RS.
Loss of cash	139	104	5,112	{ 1,645 4,199 }	326
Loss of stock	7,398	633	1,590	1,845	511
Depreciation of stock	1,008	9,305	2,275	8,314	2,501
Value of stock used in previous years, but not charged to works.	8,132	1,963	...	...	...
Irrecoverable advances	...	3,121	1,384	2,626	75
Expenditure not properly accounted for, and over-charged in accounts.	1,805	68	835	...	...
Petty items	242	56	76	463	...
Legal charges	...	...	791	534	100
Total ...	18,724	15,250	12,063	11,228	3,513

29. Under "Stock," the year closed with a balance which falls short of that with which the books of this office were opened by Rupees 7,321, and this amount, in accordance with rule, has been taken in reduction of the outlay on works from the Ordinary grant.

30. Excluding from the calculation the sum of Rupees 6,736-15-5 which, prior to the submission of my Report on the annual Accounts for 1870-71, had been paid into Treasury, the balance against Civil Officers at the commencement of the past official year was Rupees 1,600-10-1. Advances, amounting in the aggregate to Rupees 2,17,674-6-9, were made during 1871-72, so that the total amount which had to be accounted for by Civil Officers from advances made to them by the Public Works Department was Rupees 2,19,275-0-10. Of this sum Rupees 2,08,558-13-9* have been adjusted, either by Accounts of actual expenditure, or by refunds into Treasury, and Rupees 10,716-3-1 still remain to the debit of the following officers :—

* Includes Rupees 7,530-2-11 paid into the Treasury, but not yet brought forward in the Civil Accounts.

	RS.	A.	P.
Civil and Session Judge, Vizapagatam	34	7	9
Collector of Godavery	3,161	1	8
Sub-Collector, South Arcot	3,343	12	0
Collector of Trichinopoly	278	12	9
Do. of Malabar	1,750	13	6
Head Assistant Collector of do.	2,147	3	5
	10,716	3	1

31. Under the rules no portion of these advances can be expended during the current official year in the absence of specific assignments of funds from that year's grant, and it is a matter for regret that, in the face of the clearest rules laid down for the guidance of Civil Officers, the balance outstanding was not more promptly adjusted.

32. The Statements of Objectionable Items for the year having been closely examined, I observe that the following items of irregular outlay, coming within the provisions of clause 1, paragraph 10, of the " Note " by the Accountant General of the Public Works Department, recorded in G. O., No. 1,088 dated 29th April 1872, still remain undisposed of. Under " Local," the irregular expenditure is traceable, in some cases, to emergent demands made for the relief of the poor in the famine-stricken districts in the North, and in others to changes made in the original Budgets, the revised Budgets issued towards the end of the year having contained no allotments, or insufficient provision, for works which had been prosecuted in good faith by the officers of the department, and in the belief that the funds originally placed at their disposal would not be, either wholly or in part, withdrawn. Under Provincial there are but few items of irregular expenditure, while, against Imperial, there has, on the whole, been a very marked improvement in the procedure observed in the execution of works, allotments being, as a rule, made by Superintending Engineers in good time to cover expenditure incurred by their subordinate officers on regularly sanctioned estimates, or under circumstances of great emergency.

Divisions.	Expenditure without estimate and without grant.		Expenditure without estimate only.		Expenditure without grant only.		Expenditure in excess of estimate beyond prescribed limitations.		Expenditure in excess of grant beyond prescribed limitations.	
	Number of Works.	Amount.	Number of Works.	Amount.	Number of Works.	Amount.	Number of Works.	Amount of excess over estimate.	Number of Works.	Amount of excess over grant.
Ordinary.		RS.		RS.		RS.		RS.		RS.
3rd Division ...	...	...	1	3,000	...	...	2	11,085	...	...
4th do. ...	...	...	...	...	...	...	1	1,687	1	512
5th do. ...	...	...	...	...	1	1,000	...	...	...	...
7th do. ...	...	...	...	...	...	...	1	25,722	...	...
	...	...	1	3,000	1	1,000	4	38,494	1	512
Provincial.										
2nd Division ...	...	...	...	...	2	2,251	...	..	...	...
3rd do. ...	1	2,220	1	690	...	...	...	..	...	...
4th do. ...	...	...	1	591	1	800	...	...	...	...
7th do. ...	...	...	...	...	1	544	...	...	...	...
	1	2,220	2	1,281	4	3,595	...	...	...	...
Local.										
1st Division ...	15	19,801	1	3,500	...	...	...	...	5	15,473
2nd do. ...	...	...	...	...	...	...	...	...	3	7,193
3rd do. ...	1	495	...	...	1	1,067	...	...	1	4,000
5th do. ...	1	988	1	420	1	1,300	...	...	2	8,160
7th do. ...	...	...	...	...	...	...	...	...	2	1,948
8th do. ...	...	...	...	...	...	...	...	...	2	9,138
	17	21,284	2	3,920	2	2,367	...	...	15	45,912
Grand Total...	18	23,504	5	8,201	7	6,962	4	38,494	16	46,424

33. *Expenditure without estimate and without grant.*—The item recorded against Provincial Funds is the Taluq Cutchery* at Pulivendla, the Contractor for which having instituted a suit against the Officer in charge of the Cuddapah Range for the recovery of the value of mate-

* See Statement of Objectionable Items for March 1872.

rials supplied to the work, the matter was referred for the orders of Government, who, in Proceedings No. 3,150, dated 14th December 1871, on a review of the circumstances of the case, decided that "it would be preferable and more equitable to come to a compromise on the terms suggested by the Civil Judge," than to have "the case pushed on to a decree." This order was construed by the Superintending Engineer into an authority for the disbursement of the sum noted; but it does not appear that any steps were taken to obtain a formal and specific appropriation to cover the charge, which now appears as irregular.

34. The whole of the expenditure entered under this head against the fifteen items appearing opposite the 1st Division under *Local* will be found recorded in the Statements of Objectionable Items for January, February, and March 1872, and was incurred, under the sanction of Government, on works undertaken for the relief of the poor in the Ganjam and Vizagapatam Districts. The total expenditure on Local Fund Works in the former district is within the entire Local Fund grant, notwithstanding the circumstance of no *specific* appropriations having been made for famine relief works; but in Vizagapatam the Accounts show a slight excess (within Rupees 3,000) under Local Funds, while under Ordinary and Provincial there is a larger saving. The items noted against the 3rd and 5th Divisions represent emergent works undertaken under the authority of the Superintending Engineers, in the former case for the closing of breaches on the Nundicotcoor road* in the Kurnool District, and in the latter for the examination of the foundations of the Vellaur bridge† in the South Arcot District which was lately destroyed.

* See Statement of Objectionable Items for December 1871.

† Do. for February and March 1872.

35. *Expenditure without Estimate only.*—The item entered against the 3rd Division below "*Ordinary*" is the new Telegraph Office* at Bellary, which the Superintending Engineer states was commenced on the authority of G. O., No. 3,175, dated 18th December 1871. In his letter to Government, No. 1,762, of the 11th idem, the Superintending Engineer reported that the rough plan for this building, which was sent to the Superintendent of Telegraphs, Bangalore Division, on the 14th November preceding, had been submitted by that officer for the approval of the Director-General of Telegraphs in India.

* See Statement of Objectionable Items for March 1872.

36. The two items appearing under this head below "*Provincial*" are the following :—

*3rd Division.**—Taluq Cutcherry at Sidhout.

4th Division.†—Flooring the press-room at the Revenue Survey Office.

* See Statement for July 1871.

† Do. for March 1872.

The outlay on the former of these works represents a payment made on account of work performed in a previous year. As regards the estimate, the Superintending Engineer, writing on the 10th April last, states that on the 14th July 1871 he had forwarded to the Range Officer a skeleton estimate for this work, and that as the Regular Estimate had not, up to date, been received, and the range had meanwhile passed into other hands, he had called the attention of the officer now in charge to the subject, with a view to the estimate being placed before Government as early as possible. The required sanction has *not* yet been communicated to this

office. With respect to the other work, the Superintending Engineer of the 4th Division has been requested to take measures for obtaining the sanction of Government to the estimate, which appears to have been submitted to him by the Executive Engineer in charge of the Presidency Range.

37. Only two works appear against "Local" under this head. The first (building a punt for Local Fund Works) appertains to the 1st Division* and the other (closing breaches in the Chellembrum road) to the South Arcot District in the 5th Division. Both items will be found in the Statements of Objectionable Items for March 1872. Against the former, an estimate of Rupees 5,817 is entered in the Range Officer's Progress Report, and the Proceedings of the Board of Revenue of the 14th March 1872, No. 1,945, are quoted in support of the entry; but as those Proceedings do not contain the required provision, the outlay is treated as objectionable. The latter work, which appears also in the Statement of Objectionable Items for February 1872, was undertaken on emergency. The Superintending Engineer states that an estimate of Rupees 420 has been sanctioned by the Local Fund Board, but the sanction has not yet reached this office.

* Godavery District.

38. *Expenditure without grant only.*—There is only one item coming under "Ordinary." It represents the amount paid to the Mysore Department Public Works for the up-keep of the Military buildings* at Mercara. There were no funds at the disposal of the Superintending Engineer of the 5th Division to cover this charge, and the outlay was accordingly objected to. The Range Officer, however, reports that the Mysore Government has returned the amount, which will accordingly be credited in the Accounts for May.

* See Statement of Objectionable Items for March 1872.

39. Of the four works falling below "Provincial" under this head, those (two in number, with a total expenditure of Rupees 2,251) in the 2nd Division are connected with the Point Divi Lighthouse.* Under the authority of G. O., No. 303, of the 13th November 1871, the Superintending Engineer states that he undertook the construction of the retaining wall round the lighthouse and the erection of two cook-rooms. This office having objected to the outlay on the ground that no specific allotments had been made for the works in question, the Superintending Engineer reported the circumstance to Government in letter No. 39, dated 29th May 1872, on which Proceedings, No. 1,428, of the 8th June, were passed. The third work (Improving† the Cooum river) appertains to the 4th Division, and the Superintending Engineer states, in reference to it, that Colonel Wilkieson, late in charge of the Division, authorized the work on emergency on a requisition from the Municipal Commissioners. Government remarked in their Order No. 34, dated 3rd July 1872, that if the work was considered immediately necessary before an allotment of funds could be made, intimation of the fact should have been communicated to the Controller.

* See Statement of Objectionable Items for March 1872.

† See Statement of Objectionable Items for March 1872.

The last item (constructing* a Range Office at Luckadie in the Wynaad)

* See Statement of Objectionable Items for March 1872.

is a work on which the unexpended balance of estimate on the 31st March 1871 was less* than Rupees 500. In the belief that the amount required to complete the building would not exceed that limit, the Government, under paragraph 90, Section II. of the Manual, permitted the work to be continued in 1871-72 without a specific appropriation of funds. The actual outlay, however, in the past year amounted to Rupees 544, and, hence, is irregular in the absence of a grant, to obtain which it is possible there was not sufficient time, as the small excess of Rupees 44 did not really occur till March, in which month the recorded expenditure is Rupees 210-13-5.

* Namely, Rupees 490.

40. Only two items appear under "*Local*" uncovered by formal appropriations. The first appertains to the 3rd Division, and represents the outlay on the road* from Culliandroog to Coondoopee and Anantapore, in the Bellary District; the other relates to the 5th Division, and comprises the expenditure incurred on the repair of Ellis' Choultry in the district of South Arcot. In both cases, grants were provided in the *original* Local Fund Budgets; but these allotments did not appear in the *revised* Budgets issued towards the close of the past official year.

* See Statements of Objectionable Items for February and March 1872.

41. *Expenditure in excess of estimate beyond prescribed limitations.*—There are four items of this class falling under "Ordinary." They are as follow:—

3rd Division.—Improving* the water supply of the Cantonment of Bellary.

* See Statement of Objectionable Items for March 1872.

3rd Division.—Do.* the Gunganapully Mullapah Tank in the Cuddapah District.

4th Division.—Additions* and improvements to the Gas Works in Fort St. George.

7th Division.—Lawrence† Asylum buildings.

† See Statement of Objectionable Items for December 1871.

The excess over the estimate for the first of these items beyond the prescribed limitation has arisen from the adjustment sanctioned in G. O., No. 872, dated 30th March 1872, which involved a debit to the work of Rupees 9,802-3-6, and a corresponding credit to the Military Department, on account of the value of Sapper labour employed in 1869-70 and 1870-71. The grant for this work, which, at the beginning of March 1872, stood at Rupees 2,456, was supplemented in Proceedings No. 872-C, dated 30th idem, by Rupees 6,900, thus raising the allotment to Rupees 9,356, against which the recorded expenditure is Rupees 12,264, so that, apart from the outlay being objectionable on the ground of excess over estimate, it is also irregular in that it exceeds the assignment by Rupees 2,908. The Superintending Engineer is in communication with the Range Officer on the subject of the excess now noticed, and will shortly submit a full report for the information of Government. With respect to the second of the works enumerated above, it appears that the supplemental estimate was not received in the Superintending Engineer's Office till after the improvements to the tank had been completed, and it would also appear that, as Government in Proceedings No. 546, dated 29th February 1872, without calling for a supplemental estimate, made an additional grant, which, together with the original allotment and the previous year's expenditure, exceeded the sanctioned estimate, the local authori-

ties considered that it was unnecessary to submit a supplemental estimate for formal sanction. This will account for the apparent dilatoriness on the part of the Range Officer in the preparation and submission of that estimate to the Superintending Engineer. The excess over the estimate for the third work is the result of the credit afforded to the Military Department, under G. O., No. 1,287, dated 14th May 1872, for stores supplied by that department. This subject is so fully reviewed in the order just quoted, and being still under consideration, no further remark here, in reference to it, seems called for. It is necessary, however, for me to explain that, in this case also, the grant has been exceeded beyond prescribed limitation, namely, by Rupees 1,687. Sanction to the complete estimates for the last work has not yet been communicated to this office.

42. *Expenditure in excess of grant beyond the prescribed limitation.*—There is only one work* which falls under "Ordinary." The Superintending Engineer explains that the Executive Engineer by a mistake surrendered a large portion of the original grant for this work; and that of the total expenditure of Rupees 15,112, a sum of Rupees 256 has been recovered and credited to Revenue Miscellaneous.

* Additions to the late Mint buildings, to provide for the Army Clothing Department. See Statement of Objectionable Items for March 1872.

43. Of the fifteen works appearing under this head against "*Local,*" the original allotments for those noted below (nine in number) were reduced in the revised Circle Budgets issued towards the close of 1871-72, and hence Range Officers cannot be regarded as accountable for the irregular outlay :—

1st Division.—Road* from Chodaveram to Ankapilly.

Do.—Do.* from Ankapilly to Pudimadaka.

Do.—Do.† from Ellore to Chintlapoody.

2nd Do.—Do.† from Ponoor to Bapetla.

3rd Do.—Do.‡ from the eighth mile-stone to Raidroog.

5th Do.—Do.§ from Madras towards Calicut.

Do.—Do.§ from Madras towards the Travancore frontier.

8th Do.—Do.§ from Rajapolliem toTinnevelly.

Do.—Do.§ from Ottapedarum to Palamcottah.

* See Statement of Objectionable Items for January 1872.

† Do. do. for March 1872.

‡ Do. do. for February and March 1872.

§ Do. do. for March 1872.

44. Particulars of the remaining six works are as follow :—

1st Division.—Road* from Viravasaram to Pemmantree.

Do.—Do.* from Rajahmundry to Toonee.

2nd Do.—Metalling* and making road embankment from Nellore to Coduen.

Do.—Road* from Rapury and Guduru road at Tippavarapaud to Venkatagherry.

* See Statement of Objectionable Items for March 1872.

7th Division.—Cochin* Harbour-works.

Do. (Wynaad)† Tambracherry ghaut and road.

* See Statement of Objectionable Items for February 1872.

† Do. do. for March 1872.

The grants for the first two of these works appear to have been exceeded under authority, by the Range Officers concerned, in anticipation of sanction to certain transfers of funds which had been recommended by the Superintending Engineer to the Local Fund Board. It is not very clear whether the Officer in charge of the Nellore Range acted under similar authority in prosecuting the third and fourth works, as the Superintending Engineer simply states that the excess expenditure over grant was incurred by the Range Officer apparently under the impression that additional funds would be provided in time. There appears to have been no authority for the expenditure in excess of grant for the fifth work. On the matter being referred to the Superintending Engineer, Colonel Farewell stated that a revised estimate had been submitted to Government with a full report. It is believed that the report referred to is that reviewed in Proceedings of the 2nd May 1872, No. 1,125. The excess outlay, as compared with grant, on the last work, is the result of the debit raised, in accordance with G. O., No. 1,287, dated 14th May 1872, in order to afford credit to the Military Department for gun-powder, etc., supplied for the works at the Tambracherry ghaut.

45. The grants made to cover State outlay in connection with Guaranteed Companies, and the debits actually raised in the year's accounts against those grants are compared in the following abstract :—

Companies.	Establishments.		Land.		Total.		More than grant	Less than grant.
	Grant.	Outlay.	Grant.	Outlay.	Grant.	Outlay.		
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Railway Companies	73,700	66,894	1,71,600	27,640	2,45,300	94,534	......	1,50,766
Madras Irrigation and Canal Company ...	10,210	9,378	7,930	2,798	18,140	12,176	......	5,964
Total...	83,910	76,272	1,79,530	30,438	2,63,440	1,06,710	......	1,56,730

46. No special remark or explanation seems to be required in reference to the results noted against the Madras Irrigation and Canal Company. As regards the Railway Companies, the outlay, both on Establishments and Land, fell short of grant, but there is a very marked difference between expenditure and allotment, particularly under the latter head. The short outlay on "Establishments" is due chiefly to smaller salaries having been passed to the Acting Examiner and the Assistant Consulting Engineer than were provided for in the Budget, and to savings in travelling allowance and on the provision for office rent. The expenditure on "Land" fell below the grant owing to projects for Railway extension not having made as much progress as was anticipated. In the Madura, Tinnevelly, North and South Arcot Districts, a large sum was provided for land, but no land having been taken up in 1871-72, the year's accounts show no payments. For the Coimbatore District, the provision for land was Rupees 38,000 in excess of actual disbursements.

47. The original appropriation to Public Works from Provincial Funds (excluding the grant of Rupees 30,000 for London supplies) was Rupees 8,83,610. During the year this was supplemented by grants aggregating Rupees 97,331, so that, at the close of the year, the actual available funds amounted to Rupees 9,80,941, against which the recorded expenditure is Rupees 8,88,582 as shown in the subjoined abstract.

Heads.	Original Grant.			Modified Grant.			Expenditure.		
	New Works.	Repairs.	Total.	New Works.	Repairs.	Total	New Works.	Repairs.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Civil Buildings	5,36,000	1,14,000	6,50,000	5,65,710	1,22,723	6,88,433	4,72,236	1,12,483	5,84,719
Communications	10,000	20,450	30,450	13,131	25,650	38,781	13,023	24,604	37,627
Miscellaneous Public Improvements	24,500	15,000	39,500	33,451	6,318	39,769	32,853	5,020	37,873
Total for Works ...	5,70,500	1,49,450	7,19,950	6,12,292	1,54,691	7,66,983	5,18,112	1,42,107	6,60,219
Establishments	......	......	1,63,660	......	......	1,63,660	......	......	1,81,191
Tools and Plant	......	......	......	......	......	50,298	......	......	47,147
Profit and Loss	......	......	......	......	......	......	......	......	25
Grand Total ...	......	......	8,83,610	......	......	9,80,941	......	......	8,88,582

48. Except under "Civil Buildings" the actuals, as regards works, compare very favourably with the grant under each head of service. An examination of the detailed accounts shows that the short expenditure on Civil Buildings occurred chiefly in the following districts:—

Ganjam.	Malabar.
Godavery.	Wynaad.
Presidency.	South Canara.
North Arcot.	Madura.
Trichinopoly.	Tinnevelly.
Coimbatore.	

49. In the Ganjam District the short outlay of more than Rupees 12,000 was owing chiefly to the sums surrendered by the Superintending Engineer not having been taken up by Government, and to his inability to expend the additional funds which were allotted so late as on the 28th February 1872. Of the short expenditure in the Godavery, Rupees 846 represent the amount which could not possibly be spent owing to the late date on which the allotment for the District Munsif's Court at Amalapore was made. On the Central Jail at Rajahmundry there was an actual saving of about Rupees 2,500. Pending the instructions of the Superintending Engineer, and owing to the difficulty experienced in procuring a sufficient supply of labour, nearly Rupees 1,000 were left unspent from the grant for the Sub-Magistrate's Cutcherry at Alamoor. At the Presidency, the expenditure fell below grant by nearly Rupees 19,000, and this short outlay occurred chiefly on the works as per margin, and is attributable to the circumstance of funds being allotted at the close of the year, and to the surrender of sums in the statement of savings, as not being required, during the year. More than Rupees 8,000 were

	RS.
Improvements to the late Presidency College to adapt the building for a Police Court	2,027
Lunatic Asylum.—Additional accommodation...	5,357
Reservoir at the General Hospital ...	1,800
Improvements to Penitentiary, etc. ...	7,023
Small savings on other works	2,273

left unspent from the appropriations to the North Arcot District, and this is owing to a supplemental allotment being in one instance made rather late in the year, and to their being no time consequently to work it out fully:—also to the heavy rains in the monsoon which delayed work, and to neglect on the part of contractors. In the Trichinopoly District considerable difficulty was felt in obtaining skilled labour (carpenters), and this led to upwards of Rupees 4,200 being left unutilized from the grants for the Taluq Cutcherry at Perambalore and Sub-jail at Moosery. The short outlay in the Coimbatore District occurred chiefly on the Taluq Cutcherry at Erode, it having been found impracticable, from various causes, to expend on that building more than Rupees 5,458 out of a grant of Rupees 9,200. A little more than Rupees 5,000 was left unutilized from the allotments made for Civil Buildings in Malabar. This was, to some extent, due to the commencement of the Subsidiary Jails at Poodiangady, Chowghat, and Ponany late in the year, and to delays in the completion of the iron doors for the Lunatic Asylum at Calicut owing to all the available skilled labour at that place having been otherwise engaged "during the merchants' busy season." Of the sum of Rupees 6,566 left unspent in the Wynaad, Rupees 2,110 appertain to the grant for the Sub-Magistrate's Cutcherry at Vythery, for which the requisite materials could not be procured, and the balance to that for the Deputy Collector's Cutcherry at Manantoddy, the site for which had not been finally settled by the Revenue Authorities. In the Condapore Range of the South Canara District there was but one Overseer in charge of two taluqs, and thus, owing to insufficient executive agency, about Rupees 3,000 were not availed of from the grants for the Court-house at Bramawar, Sub-Magistrate's Cutcherry at Karikal, and the Head Assistant Collector's residence at Condapore. Owing to the omission to carry out one item of the estimate for the Subsidiary Jail and out-houses at Mangalore, which was found to be unnecessary, there was an actual saving of about Rupees 1,500. In the 8th Division, which comprises the Madura and Tinnevelly Districts, about Rupees 11,000 were left unutilized, and the causes which led to this short outlay were briefly, (1) the non-receipt of sanction to the revised plan and estimate for the Taluq Cutcherry at Ambasamoodrum, (2) the late date at which the improvements to the Taluq Cutcherry at Dindigul were commenced, and (3) insufficient executive agency to admit of certain buildings in the Northern Range of the Tinnevelly District being undertaken departmentally, and the absence of proper men to carry out the works on contract.

50. The differences between the estimate and actuals under "Establishments" and "Tools and Plant," Provincial, having been already adverted to in paragraphs 19 to 27 above, no further explanation here, with reference to those heads, seems necessary, or indeed called for.

51. The total amount originally set apart from Local Funds on account of Public Works was Rupees 39,76,070, to which additions, aggregating Rupees 10,29,582, were made during the year, thus leaving the allotment under all heads on the 31st March 1872 at Rupees 50,05,652.

52. The following abstract shows the grant made from each Local Fund, the assignments to each main head of service, namely, Original Works, Repairs, Tools and Plant, and Establishments, and the expenditure under those heads.

Items.	Original Works.				Repairs.				Establishment.				Tools and Plant.				Total.			
	Grant.	Outlay.	More than grant.	Less than grant.	Grant.	Outlay.	More than grant.	Less than grant.	Grant.	Outlay.	More than grant.	Less than grant.	Grant.	Outlay.	More than grant.	Less than grant.	Grant.	Outlay.	More than grant.	Less than grant.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
District Road Fund...	19,68,285	13,25,155	...	6,43,130	17,96,683	16,64,287	...	1,32,396	7,05,472	9,16,417	2,10,945	...	42,087	29,705	...	12,382	45,12,527	39,35,564	...	5,76,963
Union do.	11,510	3,362	...	8,148	1,340	617	...	723	......	......	...	...	......	...	...	...	12,850	3,979	...	8,871
General do.	53,566	11,306	...	42,260	52,760	17,140	...	35,620	160	6,231	6,071	...	1,299	226	...	1,073	1,07,785	34,903	...	72,882
Endowment do.	6,930	1,880	...	5,050	2,805	292	...	2,513	......	142	142	...	......	5	5	...	9,735	2,319	...	7,416
Bungalow do.	......	392	392	......	18,508	8,857	...	9,651	......	2,554	2,554	...	......	93	93	...	18,508	11,896	...	6,612
Canal and Ferry do.	969	707	...	262	85	......	...	85	......	196	196	...	......	7	7	...	1,054	910	...	144
Cochrane's and Sadras Canal do.	......	......	...	......	22,200	22,200	...	......	3,720	7,949	4,229	...	......	224	224	...	25,920	30,373	4,453	......
Chuttram do.	......	......	...	......	240	......	...	240	......	......	...	...	......	...	...	...	240	......	...	240
Jungle Conservancy do.	10,590	2,607	...	7,983	9,496	7,445	...	2,051	......	2,792	2,792	...	......	101	101	...	20,086	12,945	...	7,141
Nanul Grass do.	370	407	37	......	10,476	7,500	...	2,976	......	2,196	2,196	...	......	80	80	...	10,846	10,183	...	663
Pound do.	330	330	...	......	......	......	...	......	......	92	92	...	......	3	3	...	330	425	95	......
Educational do.	1,70,710	26,732	...	1,43,978	5,200	5,311	111	......	1,670	5,883	4,213	...	......	213	213	...	1,77,580	33,139	...	1,39,441
Pagoda do.	8,600	1,222	...	7,378	......	......	...	......	......	340	340	...	......	12	12	...	8,600	1,574	...	7,026
Port do.	80,947	56,282	...	24,665	7,654	1,936	...	5,718	9,990	16,131	6,141	...	1,000	585	...	415	99,591	74,034	...	24,657
Total...	23,12,807	14,30,382	429	8,82,854	19,27,447	17,35,585	111	1,91,973	7,21,012	9,60,923	2,39,911	...	44,386	31,254	738	13,870	50,05,652	41,58,144	4,548	8,52,056
																			Short outlay...	8,47,508

53. It will thus be seen that the expenditure under all heads fell below the grant by Rupees 8,47,508. The saving under "Tools and Plant" and the excess under "Establishments" having been already noticed, the only point now requiring explanation is the difference between "Estimate" and "Actuals" under "Works."

54. One great reason urged to account for the short outlay on works, as compared with allotments, is the late date at which the revised Road Fund Budgets of 1871-72 were issued, and additional assignments made. The Local Fund Boards having now been regularly organized, and all arrangements matured for carrying out the provisions of the Act, it is not likely that similar delays will occur in the issue of future years' Budgets, but it would be well, and save numerous references and objections, if the demands on account of incomplete Local Fund Works unprovided with funds in the current year were attended to and disposed of with the same promptitude and regularity as are observable in respect to the claims on account of similar works classed as "Imperial" and "Provincial."

55. It would be impracticable for me, within a limited space, to explain fully the causes which have led to the short outlay on Local Fund Works in each district and under each head of service. Apart from the reason assigned in the preceding paragraph, the following are urged by Range Officers :—

(1.) Actual savings on sanctioned estimates.
(2.) Difficulty of obtaining men to cart material, owing to long and continued absence of rain.
(3.) Difficulty of procuring labour and materials.
(4.) Delay in the sanction of estimates.
(5.) Do. in acquiring possession of land, and in the settlement of claims to compensation.
(6.) Failure of Contractors.
(7.) Excessive grants, *i. e.*, grants above what could be conveniently and advantageously expended.
(8.) Insufficient executive agency.
(9.) Incompetence and want of energy in two or three cases, on the part of Overseers, and, in one instance, inactivity of the Range Officer.

56. Excluding *State outlay on Guaranteed Companies*, the total expenditure on Public Works in 1871-72 under *all* heads, and from *all* sources, was Rs. 82,48,448, of which Rupees 19,29,239 appertain to Establishments. The proportion of Establishment charges to the entire Public Works outlay is, therefore, a little less than $23\frac{1}{2}$ per cent.

No. 294. Read again Proceedings of the Madras Government in the Public Works Department, dated 1st December 1863, No. 3,523.

Read the following Proceedings of the Right Honourable the Governor-General of India, Public Works Department, dated Camp Meean Meer, 30th October 1863, Circular No. 59 G. G.

Expenditure in anticipation of issue of Annual Budget Orders.

Read Public Works Budget Rules.

OBSERVATIONS.—Inconvenience having been occasionally felt by Local Governments and Administrations from the non-receipt of the orders of the Government of India on the Public Works Budget for the new financial year before the beginning of that year, and no specific instructions having been given regarding the powers of Local Governments and Administrations to undertake works and incur expenditure before the orders of the Government of India on the Budget of the year are issued, His Excellency the Governor-General is pleased to lay down the following rules on the subject:—

I. All original works in progress at the end of a financial year may be continued in the new year.

II. All original works for which an appropriation was made under proper authority in the Budget of the past year, but which shall not have been begun in that year, may be commenced in the new year; the expenditure on account of any such work, in anticipation of the orders on the Budget, not being allowed to exceed the amount of the previous year's appropriation.

III. Expenditure incurred under the preceding rules will, as a matter of course, be either a charge against the special appropriations eventually passed for the works in the new Budget, or against the Reserve of the new year where no special appropriations have been made.

IV. Expenditure may be incurred on repairs to the extent of the previous year's allotment under each of the Budget sub-divisions of work; the same being, of course, a charge against the new Budget grant under the head of Repairs.

V. Expenditure may be incurred for Establishment at the average monthly rate of the previous year; the charge being, of course, made against the new Budget grant for Establishments.

VI. The monthly expenditure to be incurred in any Province, pending the issue of the orders of the Government of India on the Budget, is to be limited to one-twelfth of the total allotment of the previous year.

Government of Madras.
,, of Bombay.
,, of Bengal.
,, of N. W. Provinces.
,, of Punjab.
Chief Commissioner of Oudh.
,, ,, of Central Provinces.
,, ,, of British Burmah.
Governor, Straits Settlements.
Commissioner of Mysore.
Resident at Hyderabad.
Agents to the Governor-General for Central India and Rajpootana.

ORDERED that the above Resolution be forwarded to the Local Governments and Administrations marginally noted for future guidance.

ORDERED also that a copy of the above be forwarded to the Financial, Foreign, Home, and Military Departments, and to the Public Works Department, at the Presidency, for information.

(Signed) E. C. S. WILLIAMS, Captain, R. E.,
For *Secy. to the Govt. of India, with the Govr.-Genl.*

COMMUNICATED to the Superintending Engineers for information and guidance.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R.E.,
Secretary to Government.

No. 295. ORDER THEREON, 20th September 1872, No. 2,239.

ACCOUNT, No. 33.

WITH this letter the Controller of Public Works Accounts submits the Annual Appropriation and Outlay Account for 1871-72.

2. The original Imperial grant for the year was Rupees 50,28,000, which was reduced during the year to Rupees 49,97,940, against which the recorded expenditure is reported to be as follows :—

—	Grant.	Outlay.
	RS.	RS.
Military...	4,40,000	4,34,152
Civil Buildings...	1,09.940	36,165
Agricultural ... Ordinary ...	15,03,160	13,60,817
Agricultural ... Extraordinary ...	15,12,000	5,63,857
	35,65,100	23,93,991
Net reduction due to charges under "Profit and Loss" and decreases in Stock balances ...	......	3,808
	......	23,90,183
Establishment... Ordinary ...	8,53,000	5,89,994
Establishment... Extraordinary ...	2,63,000	1,97,131
Tools and Plant. Ordinary ...	33,400	17,882
Tools and Plant. Extraordinary ...	20,000	6,532
State outlay on Railways ...	2,45,300	94,534
Do. Madras Irrigation and Canal Company ...	18,140	12,176
Total...	49,97,940	33,08,432

3. Excluding State outlay in connection with Guaranteed Companies, the expenditure of the year fell short of the grant by Rupees 15,32,778. The short outlay on Civil Buildings is due chiefly (1) to the grant of Rupees 50,000 for the Madras Telegraph Office not having been appropriated owing to the plans and estimates not having been prepared in time, and (2) to the allotments of certain Telegraph buildings not having been fully spent for reasons which have been already explained to the Government of India.

4. The Superintending Engineers concerned will report how it is that the grants for repairs to Postal and Telegraph buildings in the districts noted in paragraph 12 were left unexpended, and whether there is a probability of the current year's grants being left similarly unutilized.

5. The attention of the Chief Engineer for Irrigation is called to the short outlay of Rupees 47,579 and 94,764 respectively on New Works and Repairs under Agricultural, Ordinary, with a view to such steps being taken for watching expenditure as will insure the grants for the current year being fully worked up to.

6. Under Agricultural, Extraordinary, the total outlay fell short of the grant* by no less a sum than Rupees 9,48,143. This great disproportion between grant and outlay is most unsatisfactory. The subject having, however, been separately noticed, no further remarks are called for in this review.

* Rupees 15,12,000.

7. The explanation furnished in paragraphs 19 to 25 shows that the amount provided on account of Establishments in the Regular Estimate for 1871-72 was as close an approximation to the requirements under that head as could be expected.

8. The attention of the Revenue Department will be requested to paragraphs 30 and 31 regarding advances to Civil Officers.

9. As the Statements of Objectionable Items come under review each month, no special remarks are called for on paragraphs 32 to 44.

10. The expenditure from Provincial Funds was Rupees 8,88,582 against a grant of Rupees 9,80,941, as follows :—

—	Grant.	Outlay.
	RS.	RS.
Civil Buildings ...	6,88,433	5,84,719
Communications ...	38,781	37,627
Miscellaneous Public Improvement ...	39,769	37,873
Establishments ...	1,63,660	1,81,191
Tools and Plant ...	50,298	47,147
Profit and Loss ...	......	25
Total...	9,80,941	8,88,582

11. The short expenditure has been chiefly on buildings, and the explanations furnished by Superintending Engineers regarding it are epitomised in paragraph 49 of the Controller's report.

12. The total grant from Local Funds for expenditure by Public Works Officers was Rupees 50,05,652, against which the expenditure was Rs. 41,58,144, or Rupees 8,47,508 less than the assignment. The chief cause of this disproportion appears to be due to the late date at which the Road Fund Budgets were issued and additional grants made.

13. With reference to the Controller's remark in the 54th paragraph, that it would be well if the demands on account of Incomplete works unprovided with funds in any current year were attended to and disposed of more promptly, the Governor in Council directs the republication of the Public Works Budget Rules promulgated by the Government of India, and communicated to all Superintending Engineers in G. O. No. 3,523 of 1st December 1863, due attention to the principles of which on the part of Superintending and Executive Officers will prevent

all unnecessary delay of works accidentally unprovided with funds and which cannot be suspended without inconvenience.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 295A. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Camp at Madanapalli, 16th August 1872, No. 1,070 :—

WITH reference to your memorandum, No. 167, forwarding correspondence particularized in a list accompanying, which correspondence is herewith returned, I cannot do better than forward a copy of a letter* from Mr. O'Ratigan, whom I called on for any explanation he might have to offer.

* No. 296, dated 6th August 1872.

2. The records of the Cuddapah Range Office have been searched without success for any written explanation given by late Overseer Seshachellum Naidoo, and, indeed, as will be seen from Mr. O'Ratigan's explanation, such is not likely to be forthcoming, as the Overseer's explanation was given to him verbally.

3. That the Overseer committed a serious irregularity in the matter of the cheque there can be no doubt, but nothing more so far as I can see: there was no possible pecuniary gain or advantage accruing to him from his course of action; his own statement is that he considered a cheque as equivalent to cash, and his great object seems to have been not to show a large unexpended balance at the close of the month. As regards Mr. O'Ratigan, he also merely regarded the transaction as irregular, and utterly unconnected with any fraudulent attempt; he called on the Overseer for an explanation, which, as beforesaid, was given verbally, and he recorded a remark on the Overseer's cash account vouching for his disapproval of the transaction.

4. The matter of the foregoing cheque is all on which I am called for information, but I would bring to the notice of Government that the charge on which the Overseer was dismissed was thrown out by the Assistant Magistrate, who remarked most severely on the conduct of the department in bringing against an old servant of Government, who possessed high testimonials, a charge based on so small and utterly untrustworthy evidence.

5. The opinion entertained of thelate Overseer will be gathered from Mr. O'Ratigan's letter, and I am informed that the then Collector, Mr. vansAgnew, was so struck by the good condition of the works in the Royachoty Taluq, that he voluntarily gave the Overseer the testimonial referred to.

6. Mr. O'Ratigan fully confirms the favorable opinion entertained by Mr. vansAgnew (who in Department Public Works matters is hard to please); he says the roads, buildings, and works in the Royachoty Taluq were always kept in splendid order, and that the Overseer not only always spent his own allotment, but was also able to spend sums in addition, which could not be spent in other taluqs.

7. On the whole, it seems to me difficult to come to any conclusion other than that the late Overseer has been very harshly dealt with.

No. 296. ORDER THEREON, 21st September 1872, No. 2,240.

ESTABLISHMENT, No. 21.

HIS Excellency the Governor in Council is of opinion that, looking to the decision of the Magistrate, the testimonials as to previous conduct and the opinion expressed by both the Superintending Engineer and the Range Officer as to the general efficiency of Taluq Overseer Seshachellum Naidoo, the grave departmental irregularities of which that subordinate was clearly guilty will have been sufficiently met by the prolonged period of suspension during which he has been debarred from Government employment. His Excellency accordingly directs his re-appointment to the Department of Public Works, and that he be transferred from the 3rd Division.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 297. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 28th August 1872, No. 446:—

I HAVE the honour to enclose a letter* from the Agent of the Madras Railway, giving cover to a report from the Locomotive Superintendent upon the results of certain experiments which have lately been made with a view to determine the relative merits of "crown patent fuel," as compared with coal, and with coal and coke mixed.

* No. 609, 23rd August 1872, with 3 enclosures.

2. The result of the experiments seems to prove satisfactorily the high value of the "crown patent fuel," there being a saving effected by using it of 11·84 per cent. when compared with coal, and of 10·24 per cent. when compared with coal and coke mixed in equal quantities.

3. Mr. Barton Wright also states that although the cost of the "crown patent fuel" is higher in England than that of coal, the freight charged upon it is considerably less than for coal or coke, and the landing charges being also less, its cost at Madras is not greater than that of coal, and considerably less than that of coke.

4. Mr. Wright also states that while the deterioration of coal, when stored in India, is rapid and considerable, "crown fuel" can be kept in India for years without any perceptible deterioration taking place.

5. I beg to suggest that Mr. Wright's report be forwarded to the Government of India for the information of Indian Railway Companies generally.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 23rd August 1872, No. 609.

In continuation of my letter No. 227, dated the 16th of April last, I have the honour to enclose you, in accordance with your request, a copy of the report* which has been made by the Locomotive Superintendent for transmission to the Board as to the experiments which have been made with a view to determine the relative merits of crown preserved coal, coal, and coal and coke mixed.

* No. 289, dated 22nd August 1872.

From the Locomotive Superintendent, to the Agent and Manager, dated Perambore Works, 22nd August 1872, No. 289.

With reference to the correspondence marginally noted,* I beg to forward you the results of the experiments† which have been made with crown preserved coal, coal, and coke and coal.

* From Secretary, Madras Railway Company, No. 488, 1st March 1872, paragraph 9.
From Agent and Manager, No. 1,220, 5th April 1872, paragraph 4.
From Consulting Engineer, No. 250, 12th April 1872.

† As per accompanying Statements A. and B.

2. It will be seen that the crown preserved coal still maintains its position as superior to either coal, or coal mixed with coke.

3. The experiments made in April were with patent fuel ex *Queen of the North*, which cost, including landing charges, Rupees 20-9-3 per ton, and with coal ex *Himalaya*, which cost Rupees 20-10-1 per ton. The experiments made in June were with patent fuel ex *Queen of the North* and *Agamemnon*, costing Rupees 20-9-3 and Rupees 23-0-6 per ton, with coal ex *Himalaya* costing Rupees 20-10-1 per ton, and with coal and coke ex *Himalaya* and *Dacre* costing respectively Rupees 20-10-1 and Rupees 29-14-11 per ton.

4. These prices cannot, however, be safely taken as the average cost of these several descriptions of fuel. The average cost of recent shipments is as follows :—

	RS.	A.	P.	
Crown preserved fuel	21	9	6	per ton.
Coal...	21	9	11	,,
Coke	25	1	11	,,

Although the cost of crown preserved coal is higher in England than that of coal, the freight charged upon it appears to be considerably less than that for coal or coke, and the landing charges being also less, its cost when it reaches us (judging by recent shipments) is not greater than that of coal, and considerably less than that of coke, whilst its value is shown by the result of experiments, and in ordinary use, to be greater than that of either.

5. In the experiments made in April the "crown fuel," calculating the difference in loads, performs its work with a consumption of 16·14 per cent. less than the coal. In the experiments made in June the performance of the "crown fuel" does not compare so favourably, but is nevertheless better than that of the coal by 7·55 per cent., and better than that of the coal and coke (mixed in equal quantities) by 10·24 per cent.

6. It will be observed that in the April experiments No. 74 Engine burnt crown fuel, and No. 58 Engine coal.

7. To make the test more reliable, as there is generally some variation in consumption of fuel due to the difference of working both of men and Engines, I arranged in the June experiments that No. 58 Engine should burn crown fuel, and No. 74 Engine coal. The results of this change goes to prove that whilst No. 74 Engine can perform 16·14 per cent. more work burning crown fuel than No. 58 burning coal ; when the order of things is reversed, No. 58 only performs 7·55 per cent. more work than No. 74. These are sister engines, and were running the same class of trains throughout, under precisely similar circumstances.

8. We may therefore consider the mean performance of the two engines worked, as described, with relation to each other as demonstrating, as accurately as possible, the relative value of the two classes of fuel.

	Saving per cent. of Crown fuel.
Thus in April No. 74 burnt less fuel than No. 58 by ...	16·14 per cent.
And in June No. 58 burnt less fuel than No. 74 by ...	7·55 ,,
Mean saving per cent. of crown fuel as compared with coal	$\frac{23 \cdot 69}{2} = 11 \cdot 84$

9. These experiments were made with fuel just received from England, so that the coal, which was of first-rate quality, was tried under the most favourable circumstances, as the deterioration of this description of fuel is rapid and considerable, whilst crown fuel may be kept for years without any perceptible deterioration taking place.

10. The recent shipments of crown fuel have been of excellent quality; and if this quality can be maintained, I believe that it will continue to be found a more suitable and economical fuel for locomotive purposes in this country than the best steam coal that can be procured.

A.

MADRAS RAILWAY.

Statement showing the consumption, during the month of June 1872, *of Patent fuel by Engine No.* 58, *of Coal by Engine No.* 74, *and of Coke and Coal mixed by Engine No.* 75.

No. of Engines	Total Miles run.	Coke used. Cwts.	Coal used. Cwts.	Patent fuel used. Cwts.	Consumption per Mile in lbs.	Average number of Vehicles per trip.	Vessels by which the fuel was consigned.
58	1,820	......	......	360	22·15	13·46	*Queen of the North* and *Agamemnon.*
74	3,740	......	795	......	23·80	13·55	*Himalaya.*
75	3,643	415	395	......	24·90	13·34	*Dacre* and *Himalaya.*

B.

MADRAS RAILWAY.

Statement showing the Consumption per Mile by Engines Nos. 74 *and* 58 *of Coal and Patent fuel (landed from the Ships "Queen of the North" and "Himalaya") in March and April* 1872.

No. of Engine.	Total Miles	Coal used. Cwts.	Patent fuel used. Cwts.	Consumption per Mile in lbs.	Average number of Vehicles per trip.	Vessels by which the fuel was consigned.
74	3,818	...	688	20·18	13·01	*Queen of the North.*
58	3,640	795	...	24·46	12·80	*Himalaya.*

(Signed) W. B. WRIGHT,
Locomotive Superintendent.

(True Copy.)

(Signed) R. B. ELWIN,
Agent and Manager.

No. 298. ORDER THEREON, 21st September 1872, No. 2,241.

| RAILWAY, No. 52. |

Ordered that this letter be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 299. (DOCKET No. 2,242, dated 21st September 1872.)

FORWARDED to the Government of India for information.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 300. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 29th August 1872, No. 1,192 :—

I HAVE the honour, with reference to G. O., No. 1,586, dated 1st July 1872, to inform you that the rearrangement of the ranges in the districts of this division will be brought into effect from the 1st September 1872. Orders have accordingly been issued.

2. I beg to forward, for the information of Government, statement showing the executive staff, etc., etc., for the ranges in each district, and I request the approval of Government to the following transfers :—

1st.—Ensign and Deputy Assistant Commissary J. Haddock, Assistant Engineer, 3rd Grade, from Cuddapah to Bellary District for the charge of Pennacondah Range.

2nd.—Mr. R. H. Hayes, Supervisor of the 2nd Grade, from Kurnool to Cuddapah District for employment in charge of sub-division of Madanapalli Range.

3rd.—Serjeant A. Crowe, Supervisor of the 2nd Grade, from Bellary to Kurnool District for permanent charge of Cumbum Range (*vide* G. O., No. 1,758, dated 24th July 1872).

3. As, however, Mr. Hayes is on sick leave, and is said to have disease of the heart, and cannot be considered likely to be again capable of hard work, I earnestll, request that a thoroughly efficient Supervisor be at once posted to the Madanapalli Sub-division, which is terribly badly off for subordinates. The new Madanapalli

Range has an area of upwards of 3,900 square miles; Government may, therefore, judge how much it is in want of hands, there being in one taluq of the sub-division an Acting Overseer, and in the other a young lad recently from the College, who being a Native Christian has not the smallest authority nor influence.

4. I would mention that I have appointed Supervisor Seton to the new Budwail Range, both because I consider him very competent and because his present range is two taluqs of the new range.

5. Should, however, Government wish to place an Assistant Engineer in charge of the Budwail Range, I should then be able to spare Mr. Thorpe for the Madanapalli Sub-division, an arrangement which would be acceptable to Mr. O'Ratigan, as Mr. Thorpe is a hard-working, intelligent man, of whom most favourable reports have been received. I would beseech the attention of Government to this most important matter.

6. I shall still require the services of an Assistant Engineer to be placed at my disposal for employment in the Cantonment of Bellary, see remarks against "Bellary" in above G. O.

7. I observe that no orders have been issued as to the particular duties to be assigned to those Sub-Engineers and Supervisors who, in consequence of the abolition of their ranges, have been placed under the orders of Range Officers of the new ranges. In all cases where this occurs, I have posted these Upper Subordinates to the charge of a sub-division of the range, which comprises in, each case two taluqs. Their duties I take to be to inspect and check-measure works, examine estimates, design works, etc.; in short, I am of opinion that their duties will in all respects be similar to what they had to perform as Range Officers, excepting, of course, that independent responsibility which they possessed, and which would now devolve upon the Range Officers (under the rearrangement scheme), who will be held responsible for the proper administration of all the taluqs in their range.

8. I request to know if Government approve of the orders I have issued upon this matter, and whether they quite meet the object in view for the better working of the department in its executive branch.

9. From the frequent reports received by Government from the Controller of Public Works Accounts of the non-receipt of completion certificates, I beg to submit that, with the charges extended in most cases, the difficulty in the timely submission of these certificates will be enhanced. It is therefore a matter for consideration if such certificates can be granted by Upper Subordinates in sub-divisional charge, the Range Officer being required to countersign whether the work was inspected by him or not.

10. I observe that no provision has been made for lascars for those Upper Subordinates posted to do duty in ranges. Their work will require constant travelling and be such as to require the services of lascars. I request early orders on this point.

11. The fact that no writer has been allowed, leads me to think that they will have no office work to perform beyond the mere passing on of papers (except accounts and all matters connected therewith) from the Overseers to the Range Officer.

12. As the number of second-class Range Offices has been increased, there will be a difficulty to procure Draughtsmen and Estimators. There will, I fear, also be some difficulty in getting passed candidates for appointment as Assistant Accountants on Rupees 25 in several of the second-class ranges. However, until it is known what establishment will be allowed for a District Engineer, the best arrangements possible will be made.

Statement showing the rearrangement of Ranges prepared agreeably to G. O., No. 1,586, dated 1st July 1872.

Local Fund Circle.	No. of Range.	Name of Range.	Taluqs comprising Range.	Name of Range Officer and Assistants.	Office Establishment. Class.	Office Establishment. Cost per mensem.	Remarks.
				Bellary District.		RS.	
Bellary ...	1	Bellary ...	Cantonment	Mr. W. Fraser, C. E., Executive Engineer.	......	......	Head-quarters, Bellary.
			Bellary	An Assistant Engineer... ...	Special.	248	Assistant Engineer under orders of Range Officer for duty in Cantonment of Bellary.
			Raidroog	Mr. S. Claridge, Supervisor ...	......	......	Mr. Claridge for supervising charge of the two taluqs with head-quarters at Herihall.
Do. ...	2	Hospett ...	Hospett ... ... Kudlighi ... ... Hurpenhully ... Hoovinhudgully ...	Mr. W. M. Montserrat, Assistant Engineer.	2nd	136	Head-quarters, Hospett. The extra Overseer of the district to have charge of Toongabuddra channels as hitherto.
Ghooty ...	3	Ghooty ...	Ghooty ... ... Adony ... ... Alloor	Mr. H. Gilby, Assistant Engineer.	2nd	136	Head-quarters, Ghooty.
			Tadpatri ... ... Anantapoor	Mr. R. S. Harris, Supervisor...	......	......	For supervising charge of Anantapoor and Tadpatri Taluqs, head-quarters, Anantapoor.
Pennacondah ...	4	Pennacondah...	Pennacondah... ... Dhurmaverum ...	Ensign and Deputy Assistant Commissary J. Haddock, Assistant Engineer.	2nd	136	Head-quarters, Pennacondah.
			Hindoopoor ... ... Madukseerah ...	Mr. J. O'Leary, Supervisor ...	......	......	For supervising charge of Hindoopoor and Madukseerah Taluqs with head-quarters at Palsamoodrum.
				Cuddapah District.			
Cuddapah ...	1	Cuddapah ...	Cuddapah ... ... Pullumpett	Mr. A. W. Hunter, Assistant Engineer.	1st	171	Head-quarters, Cuddapah.

Statement showing the rearrangement of Ranges prepared agreeably to G. O., No. 1,586, dated 1st July 1872.—(Concluded.)

Local Fund Circle.	No. of Range.	Name of Range.	Taluqs comprising Range.	Name of Range Officer and Assistants.	Office Establishment. Class.	Office Establishment. Cost per mensem.	Remarks.
				Cuddapah District.—(Concld.)			
Cuddapah ...	1	Cuddapah ...	Pulivendla ... ... Jamulmudgoo ...	Mr. Thorpe, Supervisor ...	......	......	For supervising charge of Pulivendla and Jamulmudgoo Taluqs, head-quarters, Chintacoontah.
Do. ...	2	Budwail ...	Budwail ... ... Poddatoor ... ... Sidhout	Sub-Conductor Seton, Supervisor, 1st Grade.	2nd	136	Head-quarters, Budwail.
Madanapalli ...	3	Madanapalli	Madanapalli ... ... Kadri	Mr. P. O'Ratigan, C. E., Executive Engineer.	1st	171	Head-quarters, Madanapalli.
			Voilpaud ... ... Royachoti	Will be nominated Supervisor...	......	......	For supervising charge of Voilpaud and Royachoti Taluqs, head-quarters, Voilpaud.
				Kurnool District.			
Kurnool ...	1	Kurnool	Ramulcottah... ... Putticondah ... ... Nundicotcoor ...	Captain R. F. Taylor, Executive Engineer.	1st	171	Head-quarters, Kurnool.
Do. ...	2	Nundial ...	Nundial ... ... Sirwell ... ... Koilgoontla	Mr. Supervisor Vardon ...	2nd	136	Do., Nundial.
Do. ...	3	Cumbum ...	Cumbum ... ... Markapoor	Serjeant A. Crowe, Supervisor.	2nd	136	Do., Cumbum.

BELLARY,
29*th August* 1872.

(Signed) J. VERTUE, Major, R.E.,
Officiating Superintending Engineer, 3rd Division.

No. 301. ORDER THEREON, 21st September 1872, No. 2,243.

ESTABLISHMENT, No. 22.

THE transfers of Range Officers proposed by the Superintending Engineer of the 3rd Division are approved.

2. Mr. Supervisor Hayes will be required to take up the sub-divisional charge to which Major Vertue has appointed him. If incapable of performing its duties, report to that effect will be made in due course.

3. An Assistant Engineer is not at present available for Bellary; but Conductor and Sub-Engineer Jackson has been ordered to proceed to that station for employment under the Executive Engineer.

4. Major Vertue's arrangements for utilizing the services of extra Upper Subordinates in ranges seem well calculated to meet the object in view, namely, assisting Range Officers to check executive details. Sub-divisional Officers will have establishments on the following scale, namely :—

	RS.
1 Writer and Accountant ...	25
2 Lascars ...	14
	39

which the Controller will be authorized to pass on receiving intimation of date of taking charge and entertainment. He will also receive completion certificates bearing their signature and the counter-signature of Range Officers.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 302. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 3rd September 1872, No. 1,251 :—

I HAVE the honour to report that the Officer in charge of Ghooty Range has just reported the result of his inspection of the Adoni Taluq in charge of Serjeant Barnes.

2. The report is very favourable indeed; the roads are said to be in excellent order; several new roads traced by Serjeant Barnes are said to reflect great credit on him; the masonry works constructed by him are said to have been substantially built, and to have stood well; and on one road from Holwy to Kosghee Serjeant Barnes effected a clear saving of 5,000 Rupees out of 25,000.

3. Mr. Gilby further states that since he assumed charge, Serjeant Barnes has conducted himself in a becoming and satisfactory manner.

4. Ample evidence has transpired to show that the late Head Accountant of the range was very inimical to Serjeant Barnes, and was the means of doing him a great deal of harm by misrepresentation and otherwise.

5. This and the apparent hopelessness of promotion seem to have quite disheartened the man, and no doubt tended to produce the indolence, apathy, and

listlessness, of which Colonel Moberly complained—*vide* G. O. No. 1,190 of 8th May 1872.

6. I consider, however, that Mr. Gilby's report clears him in a great measure from these charges, and the baneful influence of the Head Accountant being no longer felt (the Accountant has been removed to Madanapully Range), I doubt not that Serjeant Barnes will completely retrieve his character, and in that belief I venture to urge his claim to promotion as Sub-Conductor.

7. Serjeant Barnes enlisted in 1855; has seen service in the Crimea, and during the mutiny; joined this department as a Certificated Overseer in 1863, and qualified for his Military promotion in February 1870.

No. 303. ORDER THEREON, 21st September 1872, No. 2,244.

ESTABLISHMENT, No. 23.

HIS Excellency the Governor in Council has received with much satisfaction the above very favourable report of Serjeant Barnes, but is not prepared to modify his order of the 8th May, No. 1,190, regarding his promotion to the Warrant rank on the recommendation of a Range Officer of very short departmental experience, unsupported by the personal knowledge of the Superintending Engineer. He resolves to await further report at the end of the current official year; as Warrant rank is a prize which must be won not only by mere length of service in the Army, but by long continued and exemplary good conduct in the department.

2. It is very questionable whether an Accountant proved to have been guilty of conduct such as that alluded to in this letter and No. 1,182 of 28th August 1872, should be permitted to continue in so important a post. And the Superintending Engineer will accordingly submit a detailed report of the circumstances under which he was removed from one range to another, stating the salaries drawn by him in each.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 304. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 465:—

G. O., 20th April 1870, No. 1,039.
,, 20th May ,, ,, 1,309.
,, 2nd June ,, ,, 1,370.

* No. 401, 15th August 1872.

IN the Orders of Government noted in the margin mention is made of three locomotive engines which were purchased for the Carnatic Railway Company in the year 1870. No further information on the subject has reached this office, but from the accompanying letter,* received from the Examiner of Railway Accounts, it seems that the engines in question,

which were suited for the broad gauge, were sold in England after it was finally decided that the Carnatic Railway was to be constructed on the narrow gauge, and that the sale entailed a loss of Rupees 17,172-8-0.

2. The Examiner points out that the original cost of these engines, Rupees 56,022-8-0, was debited to "Stores in transitu," and that the sum recovered by their sale, Rupees 38,850, was credited to that head, and debited to the Board of Directors. He further states that the amount of loss, Rupees 17,172-8-0, has been debited in the Company's books to "Rolling Stock," in order to clear the head "Stores in transitu." Captain Moberly observes that this last transaction is correct in principle, provided that sanction is accorded to the amount of the loss being charged upon Capital.

3. I asked the Agent to furnish me with all available information on the subject of these engines, but, from his letter* of the 2nd instant, it will be seen that he is able to give none beyond the entries in the accounts received by him from England.

* No. 543, herewith forwarded.

4. I have the honour to recommend that sanction be accorded to the amount of loss on the sale of the engines, namely, Rupees 17,172-8-0, being charged to Capital.

From the Examiner of Railway Accounts, to the Consulting Engineer for Railways, dated Madras, 15th August 1872, No. 401.

I have the honour to bring the following circumstances to your notice, and to request that I may be informed whether sanction can be obtained for the transaction.

2. The Board of Directors of the Carnatic Railway Company purchased some engines some time ago for their line in England suited to the 5′ 6″ gauge, and the invoice of the cost was sent to this country, and as usual "Stores in transitu" were debited and the Board credited. The engines were never, however, sent out, and, when the gauge of the Carnatic Railway was finally decided, and the engines found to be useless for the purposes of that line, they were sold.

3. The total amount debited to "Stores in transitu" on account of the cost of these engines was Rupees 56,022-8-0. The amount recovered by their sale was Rupees 38,850, leaving a loss of Rupees 17,172-8-0. The sum of Rupees 38,850 has been correctly credited to "Stores in transitu" and debited to the Board. An entry has, however, been made in the Carnatic books debiting "Rolling Stock" with the amount of loss to clear the account "Stores in transitu."

4. The transaction is quite correct in principle, if sanction is accorded to Capital being charged with the amount.

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 2nd September 1872, No. 543.

With reference to your letter No. 211, dated the 31st ultimo, I have the honour to state that there is no information available at this office respecting the three broad gauge engines beyond that which is furnished in the correspondence quoted in your letter under reply, and that which has been subsequently furnished in the accounts remitted from England, duplicates of which have no doubt passed through the office of the Secretary of State for India.

The accounts referred to are as follow :—

Advances from the Secretary of State.	£.	s.	d.
For Payment for cost of engines, December 1870	5,190	0	0
,, Insurance on do. ,, ,, ...	9	15	0
,, Do. do. April 1871	9	15	0
,, Do. do. November ,, ...	6	10	0
,, Rent for storage of engines, December 1871	236	5	0
,, Commission on sale of engines, March 1872	150	0	0
	5,602	5	0
Less refunded to India Office for proceeds of sale of engines, June 1872	3,885	0	0
Loss...	1,717	5	0
or Rupees...	17,172	8	0

No. 305. ORDER THEREON, 21st September 1872, No. 2,245.

RAILWAY, No. 54.

ORDERED that these papers be forwarded to the Government of India, and that sanction be requested to the difference (Rupees 17,172-8-0) between the original cost and the sale proceeds of the engines referred to being charged to Capital.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 306. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 21st September 1872, No. 2,246.

RAILWAY, No. 55.

Letter to Government of India, No. 1,040, dated 20th April 1870.
Letter from Government of India, No. 808-R., dated 9th May 1870.
Letter to Government of India, No. 1,371, dated 2nd June 1870.

SIR,—Adverting to the correspondence marginally noted I am directed to forward, for the information of the Government of India, the accompanying papers in regard to the sale in England of the engines which were purchased for the Carnatic Railway under the impression that the line was to be constructed on the broad gauge, and, under the circumstances reported, I am to request that authority may be granted for charging to the Capital funds of the Company the loss of Rupees 17,172-8-0, which has been incurred by the transaction.

No. 307. Read the following letter from the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 28th August 1872, No. 1,182:—

WITH reference to G. O. No. 73 of 6th ultimo, I have the honour to submit a letter,* in original, from the Executive Engineer, Bellary Range, giving full explanation on all the points adverted to in the Controller's report, on which the above G. O. is made.

* No. 335, dated 2nd August 1872.

2. Accompanying this is a copy of a letter some time ago addressed by the Executive Engineer to me, with the view of accounting for apparent delay in responding to calls made on him, and showing that the time of his office establishment was so occupied by extraneous work, to wit, the matter of the timber deficiency case, as seriously to impair its ability for the execution of current work.

3. Mr. Fraser has entered *seriatim* and fully into each of the matters brought to notice by the Controller; and, as he has engaged that the irregularities brought to notice shall not recur, I do not see that I need trouble Government with any remark beyond that, in the matter of the so-called advance of 4,000 Rupees, Mr. Fraser had satisfied himself that he had more than value for his money; the payment, therefore, really was a "payment in part."

4. With reference to the unsatisfactory state of the accounts submitted by Mr. Barnes, the Overseer of the Adony Taluq, I have before me ample evidence that the Range Head Accountant was a deadly enemy of Mr. Barnes, and took every opportunity to harass and persecute him. He was in the habit of returning to him his station books and accounts with *pencil* corrections, insisting not only on the re-submission of the accounts thus returned, but also of fresh ones. I have no doubt that a great deal of the censure passed on Mr. Barnes is due to the workings of this man, who has now been removed to Madanapalli Range, where he is under a Range Officer with whom he will find he cannot take liberties.

No. 308. ORDER THEREON, 21st September 1872, No. 2,247.

ESTABLISHMENT, No. 24.

HIS Excellency the Governor in Council having lately passed orders on the subject of the irregularities to which a desire on the part of Range Officers to expend the balances of their allotments in the last month of the year has given rise will only on this occasion express a hope that Mr. Fraser, in common with all other officers in the department, will see the necessity for a more careful compliance with the wishes of Government expressed on this subject.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 309. Read the following Despatch from the Right Honourable the Secretary of State for India, to His Excellency the Right Honourable the Governor in Council, Fort St. George, dated India Office, London, 14th August 1872, No. 16:—

IN reply to your letter in this department, No. 12, dated 30th May 1872, I have to state that the three boilers demanded by your Government for steamers in the Godavery river will not be ready until towards the end of September next, their completion having been retarded by the present scarcity of iron.

2. The boilers will be shipped to Cocanada as soon after their examination as tonnage for that port is obtainable.

No. 310. ORDER THEREON, 21st September 1872, No. 2,248.

ACCOUNT, No. 34.

COMMUNICATED to the Superintending Engineer of the 1st Division in continuation of G. O. No. 1,323 of 14th May 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 311. Read the following Circular of the Government of India, Public Works Department, (Account—Irrigation,) dated Simla, 30th August 1872, No. 44 :—

Powers of Local Governments and Administrations to pass expenditure in excess of sanctioned estimates for works which are being constructed wholly or partly from Loan Funds.

Read again—

Public Works Department Circular No. 56 of 1871, Clause VIII.
Do. do. ,, 8 of 1872, paragraph 3.

Read also—

Letter No. 319 I—A, dated 5th July 1872, from the Government of____________.

RESOLUTION.—Enquiry is made as to the precise powers of Local Governments to pass expenditure in excess of sanctioned estimates for works which are being carried out from the extraordinary grant. On referring to the existing orders regarding the sanctioning of excess expenditure in such cases, it is found that Local Governments and Administrations have not been authorized to sanction any such excesses, but that, under the rules noted in the margin, Controllers of Public Works Accounts may, in such cases, pass 5 per cent. in excess of the estimate for each individual, separately sanctioned, estimate.

* Clause VIII., Public Works Department Circular No. 56 of 1871.
Paragraph 3, Public Works Department Circular No. 8 of 1872.

2. On a further review of the question, His Excellency the Governor-General in Council considers it inexpedient that Controllers should possess powers in this matter which may not be exercised by Local Governments and Administrations, and has, therefore, been pleased to lay down the following rules for future guidance :—

I.—A Local Government, or Administration, has power to pass expenditure to the extent of 5 per cent. in excess of estimates sanctioned by the Government of India for works which are being constructed wholly or partly from extraordinary funds, provided that such excess is not more than the amount up to which the local authority concerned can sanction an estimate for a new work to be executed from ordinary Imperial funds.

II.—A Controller has power to pass expenditure in similar cases to the extent of $2\frac{1}{2}$ per cent. in excess of the estimates sanctioned by the Government of India, without reference to higher authority, provided that such excess is not more than the amount up to which the Local Government or Administration under which he is serving can sanction an estimate for a work chargeable to the ordinary Imperial grant.

Government, Mádras. } Irrigation Branch.
" Bombay.
" Bengal.
" North-Western Provinces.
" Punjab.
Chief Commissioner, Central Provinces.
" Oudh.
" British Burmah.
" Mysore.
Resident, Hyderabad.
Governor-General's Agent, Central India.
" " Rajpootana.
Chief Commissioner of Port Blair and the Nicobars.

ORDER.—Ordered, that this Resolution be forwarded to the Local Governments and Administrations noted in the margin, and to the Accountant-General, Public Works Department, for information and guidance, in continuation of Public Works Department Circular No. 8 of 1872.

Ordered also that a copy be forwarded to the Financial Department for information.

(Signed) C. H. DICKENS, Colonel, R. A.,
Secy. to the Govt. of India.

Nos. 1,165—80 A.—R., dated 30th August 1872.

COPY forwarded to all Local Governments and Administrations in the Railway Branch and Officers in charge of State Railways, for information and guidance, Circulars No. 56 of 1871 and No. 8 of 1872 having already been made applicable to the case of State Railway works.

(Signed) P. O'CONNELL, Lieut-Colonel, R. E.,
Offg. Dy. Secy. to the Govt. of India.

No. 312. ORDER THEREON, 23rd September 1872, No. 2,249.

ACCOUNT, No. 35.

COMMUNICATED to the Chief Engineer for Irrigation, the Consulting Engineer for Railways, and the Superintending Engineers for information and guidance, in continuation of G. O. No. 425, dated 13th February 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 313. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 10th September 1872, No. 480:—

Rupees 6,409-0-11.

REFERRING to paragraph 2 of the Order of Government, No. 1,992 of the 21st August 1872, I have the honour to report that the Agent proposes to meet the expenditure on account of the equipment of the refreshment rooms on

the North-West Line of the Madras Railway from the provision made in the Budget for "Stores."

No. 314. ORDER THEREON, 23rd September 1872, No. 2,250.

RAILWAY, No. 56.

THE proposed transfer of Rupees 6,409 from the allotment for "Stores" in the Madras Railway Budget is approved, and the reappropriation will be reported for the information of the Government of India with reference to paragraph 2 of their letter, No. 992-A. R., dated 1st August 1872.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 315. (DOCKET No. 2,251, dated 23rd September 1872.)

COPY of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 316. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 31st August 1872, No. 455:—

I HAVE the honour to enclose two letters* from the Agent of the Carnatic Railway Company, in which certain increases of establishment are applied for. These increases consist of (1) in the Agent's Office the appointment of a Cashier and a Moochee on salaries of Rupees 100 and Rupees 15 per mensem, respectively, and an increase of Rupees 5 to each of three Clerks; (2) in the Chief Engineer's Office the appointment of a Manager and Accountant on a salary of Rupees 250 per mensem, instead of the present Manager who draws Rupees 100 per mensem; and (3) a slight increase to the salary of one of the 1st-class and to one of the 3rd-class Engineers, upon the principle which has been recognized and sanctioned† in the case of the other Railway Companies, that after a service of two years in any class engineers are entitled to be moved into a higher grade, and to receive a slight addition to their salaries.

* No. 505, dated 26th July 1872.
,, 524, ,, 15th Aug. ,,
with enclosure and a comparative statement.

† *Vide* G. O., 22nd May 1868, No. 1,622.

2. The reasons which have led to this application are stated in full in the Agent's letters; and I have only to add that after discussing the matter with him and with the Examiner of Railway Accounts, I am satisfied that in every case the increases applied for in the Office Establishments are rendered necessary by a corresponding increase in the work to be done, and I accordingly recommend them for sanction.

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 26th July 1872, No. 505.

With reference to the Minutes of the Meeting held at this Office on the 18th instant, a copy of which was forwarded to you in this Office letter No. 502, I have the honour to solicit the sanction of the Government to the following increases in the pay of some of the members of the staff, and also to the entertainment of two or three additional, which are requisite to discharge efficiently the increasing duties of the Office.

2. In the Agency Office I propose to increase the under-mentioned employés, namely :—

Chuckrepany, Writer, from	Rupees	25	to	30	per	mensem.
Nursiah, ,,	,,	15	,,	20	,,	
Vuratharajah, ,,	,,	20	,,	25	,,	

the grounds upon which this recommendation is based are that the parties are unfairly under-paid ; that they could only be re-placed at considerably higher rates ; that the two first have been in the service since the opening of the Tramway in 1865, and the last since the beginning of 1871 ; that all are regular and attentive to their duties, and are justly entitled to a remuneration more proportionate to the pay of others discharging similar duties. I was recently nearly losing one of them in consequence of his having engaged himself elsewhere at a higher rate of pay.

3. I also propose, with the sanction of Government, the entertainment of the services of a Cashier and a Moochee. Since the payments on account of the Engineering Department have been transferred to this Office in obedience to your Office letter No. 85, there has necessarily been an increase in this duty, and, in anticipation of works of construction commencing, there will be a still further considerable increase ere long. I trust you will agree with me therefore in deeming it essential that a special responsible officer should be employed for this work. A Moochee is also urgently required to make up the records of the Office in a suitable form for reference and preservation.

4. The salary of the Cashier I propose should be commenced at Rupees 150 per mensem, with security for Rupees 2,000, and that of the Moochee at Rupees 15 per mensem.

5. In the Engineering Department the whole of the Covenanted European Engineers are seeking an increase of pay, in accordance with the intimation made to them in England at the time of their engagements, namely, that after two years' service in India they would, if deserving, be promoted from the 2nd or lower to the 1st or upper grade of the class to which they belonged ; and as I learn that this is customary not alone on the Railways in this Presidency but also in the other Presidencies, I have the honour to solicit the sanction of the Government to the following promotions, namely :—

S. H. James, 1st-class Engineer, from 2nd grade, at Rupees 708-5-4, to 1st grade, at Rupees 791-10-8.

C. H. G. Jenkinson, 3rd-class Engineer, from 2nd grade, at Rupees 375, to 1st grade, at Rupees 416-10-8.

6. In this department also the Office of Manager is held by a man whose health is very much impaired, so much so as to render him incapable of discharging efficiently the duty ; in these circumstances the Chief Engineer makes application for an additional Office Manager at a salary of Rupees 250 ; in the meantime he proposes to retain the present incumbent as an ordinary Clerk, as shortly when works of construction commence additional Clerks will be required. The extra work presently involved in copying the estimates for Government, the Board, and the Districts, and the general increase in the Office-duties, renders, according to the Chief Engineer's representations, an early sanction to this appointment desirable.

7. Three additional Draughtsmen are also applied for, at Rupees 30 each, to assist in copying the plans for transmission to England and in preparing working copies and details for the districts, by having which prepared in anticipation of sanction to commence the works it is represented that much time will be saved.

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 15th August 1872, No. 524.

In reply to your letter No. 191, I have the honour to state that the post of Cash-keeper in the Chief Engineer's Office has been abolished, but the man is retained *ad interim* in the position of a Clerk, and it would have been more correct to have so designated him in the list sent with this Office letter No. 505. It may be explained, however, that it is intended to transfer him as District Engineer's Cash-keeper when works of construction commence, as he provides substantial security to the extent of Rupees 2,000, and is deemed suitable for such a position.

2. With reference to paragraph 2 of your letter my object in recommending Rupees 150 as the salary of the Cashier for this Office was to secure the services of a really responsible man who might be competent to deal reliably with the larger transactions we hope soon to be engaged in, but in deference to your views I would suggest Rupees 100 instead.

3. As respects the Manager for the Chief Engineer's Office I beg to hand you a copy of a letter submitted by the Chief Engineer, No. 426. The present incumbent of the Office is in so debilitated a state of health as to be unable to attend regularly to his duties; he is at present absent through sickness for the third, if not the fourth, time within a recent period, so that a change is imperatively necessary as early as possible; and as the Chief Engineer has now modified his application by soliciting sanction for an increased salary for the Office of Manager *in lieu* of that now available, leaving the question of the appointment of an additional Clerk at Rupees 100 for future consideration, I trust you will agree with me in the opinion that it is desirable to secure the services of a man sufficiently competent and experienced to render any further change unnecessary hereafter.

From the Chief Engineer, to the Agent and Manager of the Carnatic Railway Company, dated Madras, 15th August 1872, No. 426.

With reference to the extract from the Consulting Engineer's letter (No. 191 of the 10th instant), I beg to make the following remarks, and would request that you urge the Consulting Engineer to re-consider his decision of withholding his recommendation to my application for an increased salary for an Office Manager.

2. The Consulting Engineer admits the necessity for my having an efficient Manager, but appears to think that the work in my Office at present is not sufficiently important to warrant such an officer being employed. I regret that there should be this impression, as it is in my opinion erroneous. The duties of all my Clerks and consequently of a Manager have increased fourfold since I joined the service when I found the salary allotted, and the present holder of the Office of Manager; of late every one employed in my Office has been occupied most fully, and there has frequently been delay caused by my having personally to attend to work that ought not to have occupied my time.

3. It would be quite useless to attempt to obtain an efficient Manager for the salary now sanctioned, and no steps can be taken until the sanction of Government is received for an adequate sum for the office; and I consider it most important that I should have the services of a competent man without delay. The health of the present holder of the office is not yet established, and I may at any time be left without a Manager, and it would be worse than useless to put a fresh Clerk at Rupees 100 in charge of the work.

4. A new system of accounts is being introduced, which has not before been used on any Railway; I cannot therefore look to securing a man who has had any experience of them, and it will scarcely be denied that it would be most unfortunate if I should be obliged to remain at my Office just at the time works are being commenced on the districts, because I have not an officer capable of taking charge of it, or for the purpose of installing a new incumbent, unacquainted with the work and all previous transactions.

5. The importance of what I have above referred to has been so fully recognized in the course pursued with the Great Southern of India Railway (where a Manager was sanctioned for the Chief Engineer on a salary of Rupees 350 per mensem from the commencement of the surveys) that I was much disappointed to hear the suggestion of the Consulting Engineer of the proposal being deferred until after construction commenced, which would involve a probable delay of several months at a time when the services of an efficient officer will be more emergently required than at any other.

6. The necessity for taking steps at once to secure a proper officer is, in my opinion, so urgent that I would suggest that the increased salary should be applied for now in lieu of the present allotted sum, leaving the extra Clerk, at Rupees 100, to be entertained after construction commences.

CARNATIC RAILWAY COMPANY (LIMITED).

Statement showing the present and proposed Establishment.

Present sanctioned Establishment.		Amount per Mensem.			Proposed Establishment.		Amount per Mensem.		
No.	*Agent's Department.*	RS.	A.	P.	No.		RS.	A.	P.
1	Agent and Manager ...	1,000	0	0	1	Agent and Manager ...	1,000	0	0
1	Chief Auditor	375	0	0	1	Chief Auditor	375	0	0
1	Book-keeper	200	0	0	1	Book-keeper	200	0	0
1	Traffic Accountant ...	130	0	0	1	Traffic Accountant ...	130	0	0
					1	Cashier	100	0	0
1	Clerk	25	0	0	1	Clerk	30	0	0
1	Do.	20	0	0	1	Do.	25	0	0
1	Do.	15	0	0	1	Do.	20	0	0
					1	Moochee	15	0	0
2	Cash Peons, 10 Rs. each...	20	0	0	2	Cash Peons, 10 Rs. each...	20	0	0
4	Peons, 7 Rs. each ...	28	0	0	4	Peons, 7 Rs. each ...	28	0	0
1	Waterman	3	0	0	1	Waterman...	3	0	0
1	Sweeper	3	0	0	1	Sweeper	3	0	0
	Total...	1,819	0	0		Total...	1,949	0	0
	Chief Engineer's Department, Head Office.								
1	Chief Engineer, salary and tentage.	1,200	0	0	1	Chief Engineer, salary and tentage.	1,200	0	0
1	Manager	100	0	0	1	Manager and Accountant.	250	0	0
1	Native Assistant	60	0	0	1	Native Assistant	60	0	0
1	Clerk	50	0	0	1	Clerk	50	0	0
1	Do.	40	0	0	1	Do.	40	0	0
1	Do.	25	0	0	1	Do.	25	0	0
1	Do.	12	0	0	1	Do.	12	0	0
1	Head Draughtsman ...	150	0	0	1	Head Draughtsman ...	150	0	0
1	Draughtsman	100	0	0	1	Draughtsman	100	0	0
2	Do., at 70 Rs. each...	140	0	0	2	Do., at 70 Rs. each...	140	0	0
1	Do.	60	0	0	1	Do.	60	0	0
1	Do.	35	0	0	1	Do.	35	0	0
					3	Do., at 30 Rs. each...	90	0	0
1	Do.	25	0	0	1	Do.	25	0	0
1	Apothecary, salary and horse allowance.	65	0	0	1	Apothecary, salary and horse allowance.	65	0	0
8	Peons and Lascars ...	56	0	0	8	Peons and Lascars ...	56	0	0
2	Cash Peons, at 7 Rs. each.	14	0	0	2	Cash Peons, at 7 Rs. each.	14	0	0
1	Sweeper	3	0	0	1	Sweeper	3	0	0
1	Scavenger...	2	0	0	1	Scavenger...	2	0	0
	Total...	2,137	0	0		Total...	2,377	0	0

Statement showing the present and proposed Establishment.—(Concluded.)

No.	Present sanctioned Establishment.	Amount per Mensem. RS.	A.	P.	No.	Proposed Establishment.	Amount per Mensem. RS.	A.	P.
	Survey.								
2	1st-class Assistant Engineers, salary and tentage.	1,696	10	8	1	1st-class Assistant Engineer, salary and tentage.	931	10	8
					1	Do. do. do. ...	848	5	4
1	2nd do. do. ...	632	0	0	1	2nd do. do. ...	632	0	0
3	3rd do. do. ...	1,395	0	0	1	3rd do. do. ...	506	10	8
					2	Do. do. do. ...	930	0	0
1	Engineering Assistant ...	150	0	0	1	Engineering Assistant ...	150	0	0
2	Do., at 130 Rs. each.	260	0	0	2	Do., at 130 Rs. each	260	0	0
3	Apothecaries, at 65 Rs. each	195	0	0	3	Apothecaries, at 65 Rs. each	195	0	0
4	Clerks and Interpreters, at 40 Rs. each	160	0	0	4	Clerks and Interpreters, at 40 Rs. each	160	0	0
60	Lascars, at 7 Rs. each ...	420	0	0	60	Lascars, at 7 Rs. each ...	420	0	0
6	Tappal Runners, at 5 Rs. each.	30	0	0	6	Tappal Runners, at 5 Rs. each.	30	0	0
	Total...	4,938	10	8		Total...	5,063	10	8

(Signed) J. T. FISHER,
Agent and Manager.

No. 317. ORDER THEREON, 23rd September 1872, No. 2,252.

RAILWAY, No. 57.

ORDERED that this letter be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 318. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 23rd September 1872, No. 2,253.

RAILWAY, No. 58.

SIR,—I am directed by His Excellency the Governor in Council to submit the accompanying application from the Consulting Engineer for increasing the present establishment of the Carnatic Railway Company. Concurring in the necessity for the augmentation under the explanation furnished, His Excellency the Governor in Council recommends that the increase of Rupees 495 per mensem, detailed in the comparative statement and as shown below, may meet with favourable consideration :—

	RS.
Agent's Office	130
Chief Engineer's Office	240
Survey Department.	
Increase to the salary of one 1st and one 3rd-class Engineer, namely, Rupees 83-5-4 and Rupees 41-10-8	125

No. 319-320. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Account—Irrigation,) to the Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 3rd September 1872, No. 249 A. I. :—

IN order to admit of the distribution of the grant for Public Works for the ensuing official year, I am directed to request that a rough estimate of the probable requirements for Agricultural Works for 1873-74, prepared according to the instruction issued in Public Works Department, No. 174 A. I., dated 17th August 1869, may be submitted so as to reach this office at Simla on the 25th September 1872 at the latest.

No. 321. ORDER THEREON, 23rd September 1872, No. 2,254.

IRRIGATION, No. 15.

ORDERED that the following letter be sent.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 322. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 23rd September 1872, No. 2,255.

IRRIGATION, No. 16.

SIR,—With reference to your letter, No. 249 A. I., dated 3rd September, I am directed to forward herewith a rough estimate of the probable requirements of this Presidency for 1873-74 for Agricultural Works.

Rough Estimate of the probable requirements of the Madras Presidency on account of Agricultural Works for 1873-74.

Detail.	Amount of Estimate.	Sum that can be expended in 1873-74.	Remarks.
Extraordinary.	RS.	RS.	
Ganjam.—Irrigation from the Rooshkoolia.	......	1·25	Investigation of project nearly completed.
Godavery.—Western Delta improvements.	13·05	1·50	Estimates sanctioned—*vide* letter from Government of India, No. 367-I. of 2nd August 1871. Item No. 21 of Budget for 1872-73.
Do.—Eastern do.	10·81	1·50	Do.—*vide* do. No. 181-I. of 20th May 1871. Item No. 22 of Budget for 1872-73.
Kistna.—Improvements of Masulipatam Section.	1·83	0·20	Sanctioned. Item No. 23 of Budget for 1872-73. Probable balance of estimate.
Do.—Widening head of Masulipatam or Main Canal.	1·14	0·25	Do. Item No. 24 of do.
Do.—Improving Seetanagaram Main Canal.	2·76	0·32	Do. Item No. 25 of do. Probable balance of estimate.
Do.—Improvement of Ryves' Channel.	4·14	0·50	Do. Item No. 26 of do.
Nellore.—Improvement of Survapully Channel.	4·20	0·20	Do. Item No 28 of do. Probable balance of estimate.

Rough Estimate of the probable requirements, etc.—(Concluded.)

Detail.	Amount of Estimate.	Sum that can be expended in 1873-74.	Remarks.
Extraordinary.—(Concluded.)	RS.	RS.	
Do.—Sungum Project	25·83	2·00	Estimates conditionally approved by Government of India in letter No. 330-I. of 22nd April 1872, and forwarded to Secretary of State.
South Arcot.—Pelandorai Project.	1·98	0·67	Budget Item No. 30 of 1872-73. Probable balance of estimate.
Tanjore.—Vennaur Regulators. ...	1·97	0·11	Do. No. 32 of 1872-73. Do.
Do.—Cauvery and Vennaur Regulation Project.	5·20	0 50	Estimates with Government of India, *vide* their Secretary's letter No. 81-I. of 7th March 1871. Budget Item No. 33 of 1872-73.
Madura.—Perryaur Project ...	55·00	3·00	Estimates now under examination will be submitted shortly. Budget Item No. 34 of 1872-73.
Tinnevelly.—Streevigoontum Anicut Project.	8·32	0·40	Budget Item No. 35 of 1872-73. Probable balance of estimate.
Ganjam.—Vamsudara river or Chicacole Project.	......	} 1·00	Possible expenditure on such of these projects as may be sufficiently advanced in 1873-74.
Godavery.—Central Delta Project.	......		
Do.—Unnamalunka Project ...	......		
Kistna.—Eastern Delta	......		
Do.—Western do.	......		
Tinnevelly.—Numbiar river irrigation.	......		
Do.—Improvement and extension of irrigation under the Tambrapoorney and its tributaries.	......		
Total ..	......	13·40	
Proportion of Establishment...	......	3·00	
Tools and Plant...	......	1 50	Includes probable indent for machinery for Perryaur Project from Europe.
Total *Extraordinary* ...	......	17·90	
Ordinary.			
Kistna.—Peddacuncherla Tank Project.	0·24	0·06	G. O. No. 3,008 of 12th December 1870. Probable balance of estimate.
Chingleput.—Madras Water-Supply Project.	12·25	1·92	Budget Item No. 36 of 1872-73.
Chembrumbaukum Tank Project.	4·14	0·50	Budget Item No. 37 of 1872-73.
Minor New Works under Rs. 2,500 each.	......	2·52	
Total New Works, *Ordinary*...	......	5·00	
Repairs, Agricultural	......	14·00	
Proportion of Establishment ...	......	6·00	
Tools and Plant	......	0·20	
		25·20	
Grand Total, Agricultural...	......	43·10	

Read the following papers :—

No. 323. Endorsement of the Superintending Engineer, 8th Division, dated Tirumungalum, 8th August 1872, No. 2,233.

From the Executive Engineer in charge of Dindigul Range, to the Superintending Engineer, 8th Division, dated Periacolum, 30th July 1872, No. 261.

I HAVE the honour to enclose a travelling allowance bill for Rupees 20-8-0, which I request you will be so good as to forward to Government for consideration with this letter.

2. The first two items were included in my travelling allowance bill for May, and struck out by you for the reasons stated in your memorandum No. 1,366 of the 26th ultimo.

3. The third item was included in my bill for June, and appears to have been passed by you and struck out by the Controller.

4. In explanation of these charges I beg to offer the following remarks :—

5. On the 25th May I was at Pulney, and I had, in obedience to instructions from your Office, to inspect certain anicuts on the tributaries of the Shunmuga Nuddee, one of which was in the jungle at the foot of the Pulney Hills, about 11 miles from Pulney.

6. Now, if I had camped at this spot (Iyempully), I should have wasted a whole day, as there was nothing else to do in the neighbourhood, to say nothing of the prospect of myself and the people with me being laid up with fever from remaining in such a place in the middle of May.

7. On the 27th I inspected the "Paumben and Palghaut" road from Pulney to the boundary of the district, and there was nothing whatever to be done in the neighbourhood or on that side of Pulney, whereas there was a good deal that required attention to the north and east of the taluq.

8. I consider therefore that in each of these instances it was much better that I should return to Pulney in order to be ready for other work the next day, than that I should take two days (going and returning) over what could be done in one.

9. The third journey, on the 2nd June, was made in consequence of the receipt of a memorandum* from your Office, forwarding a letter from the Collector to the effect that the Taluq Cutcherry at Periacolum was in a highly dangerous condition, as, indeed, it certainly was, and I considered it my duty to go down to Periacolum at once to take steps to ensure its safety; perhaps I was wrong, but I am pretty sure that if I had delayed a day and any accident had happened in consequence, Government would not have hesitated to hold me responsible for the same.

* No. 861 of 28th May.

10. Concerning this last journey I have only to remark further that if a report by the head of a department that a building in the occupation of one of his subordinates is in a highly dangerous condition does not constitute an "extraordinary emergency," it is difficult to say what does.

11. But with regard to the other two the case is rather different. There was nothing in either instance to be called an "emergency", but the question I had

to ask myself was simply whether it was more for the public interests that I should make the double journey in one day, or that I should take two days over it. I decided on the former course, and still believe that I was right in so doing.

12. This range has an area of over 3,000 square miles, and contains upwards of 300 miles of road maintained or under execution by this department, besides an enormous number of small irrigation-works. It is nearly 120 miles in length from north-east to south-west, and about 80 from north-west to south-east, and will be shortly increased about a third by the addition of another taluq. Government lay the greatest stress on the frequent inspection of works by Range Officers, and it becomes necessary for me to arrange my movements so as to get over as much ground as possible in the course of each month. How far these movements have been judicious you are able to judge.

13. No doubt it can very rarely happen that a journey of over 20 miles in a day can be necessary (if only because it is not easy to find a length of 20 miles without work of some kind in progress); but now and then such cases do occur, and I maintain that an officer in my position may reasonably be allowed some discretion, and that where he conscientiously believes a journey of over 20 miles to be advisable on public grounds, he ought not to be restrained from making it by any considerations about "extraordinary emergencies".

14. Of course, it may be said that such a discretion is liable to be abused; but that is an argument which I decline to take into consideration.

15. Observe that I am not claiming any uncontrolled discretion. I am quite ready to accept the Superintending Engineer's decision as to the propriety of any particular journey, and in the special cases under consideration, if the charge had been struck out by you on the ground that the journeys were unnecessary or injudicious, I should never have questioned the decision for a moment. Your memorandum above referred to showed that this was not the case, and that the correction was made in obedience to a rule, which rule, I think, acts, or is likely sometimes to act prejudicially to the public interest.

16. I hope it will be understood that I have nothing to gain personally by the acceptance of the principle for which I am contending. If the Government decide that the very modified discretion which I ask for is not allowable, I shall probably be able to reduce my travelling expenses to an extent which will much more than counterbalance the trifling amount of travelling allowance at issue. Whether the public service will gain in the same proportion is another question, but such a decision as I am contemplating implies that I am not competent to form an opinion on that point.

FORWARDED for the favourable consideration and orders of Government.

1 Copy of Memorandum.
1 Travelling Allowance Bill.

2. A copy of the undersigned's memorandum quoted by Captain Pennycuick, R.E., is forwarded for information.

3. The rules regarding mileage are so stringent that the Superintending Engineer is almost powerless to exercise any discretion in the matter, as even what he may pass is almost sure to be cut by the Controller. A certain amount

of relaxation of these rules would, in the undersigned's opinion, tend to the advantage of the service.

(Signed) R. A. ROBERTS, Lieut.-Colonel, R.E.,
Superintending Engineer, 8th Division.

REFERRED to the Controller of Public Works Accounts for report.

OOTACAMUND,
16th August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government, P.W.D.

No. 324. From the Officiating Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Fort St. George, 20th August 1872, No. 1,093.

1 Letter and one Memorandum.
1 Bill.
2 Inspection Reports for May and June 1872.

WITH reference to your endorsement on the accompanying papers from the Superintending Engineer of the 8th Division, I have the honour to state that, under the orders of Government, communicated in Proceedings Nos. 482 and 1,141 of the 17th February and 22nd April 1871, mileage is admissible to the Executive Officers of the department only for such journeys exceeding 20 miles per day as may be made under exceptional circumstances, or under the most urgent necessity.

2. The three claims now preferred by Captain Pennycuick were disallowed by the Superintending Engineer of the 8th Division prior to the submission of the Bills to this Office, and the former officer is mistaken in supposing that his claim to mileage for the 2nd June 1872 was objected to by the Controller. Had the charges been approved by the Superintending Engineer and the bills transmitted *with information*, similar to that now supplied by Captain Pennycuick, of the necessity of each journey, mileage for the 25th May and 2nd June would have been passed, as the forced march on the former date appears to have been undertaken under exceptional circumstances, and there seems to have been an urgent necessity for that made on the latter date.

Vide the two orders of Government quoted in paragraph 1 and Nos. 339 and 944 of the 29th January and 20th March 1866.

3. The journey of the 27th May 1872 appears to have been of an ordinary character, and having in view the ruling of Government that journeys undertaken for the purposes of ordinary inspections do not entitle to mileage, I am of opinion that Captain Pennycuick's claim for that date is inadmissible.

4. I enclose for reference Captain Pennycuick's Inspection Reports for May and June 1872.

5. Adverting to paragraph 3 of Colonel Robert's endorsement on Captain Pennycuick's letter, I have to observe that the action of this Office in accepting or disallowing claims to travelling allowance or mileage is guided by the rules and orders of Government issued from time to time. When charges are disallowed, which the Superintending Engineer considers should be passed, an appeal to Government is always open to that officer. Colonel Roberts's remark would seem to imply that the "cutting" was effected according to the personal views of the Controller, while I may safely say that such is not the case.

No. 325. ORDER THEREON, 23rd September 1872, No. 2,256.

ESTABLISHMENT, No. 25.

HIS Excellency the Governor in Council remarks that it was under a misconception of the spirit of former rulings, as pointed out by the Controller, that the Superintending Engineer, 8th Division, disallowed Captain Pennycuick's claim for mileage on two out of the three occasions in question, and though the Controller is doubtful as to the third, His Excellency is of opinion that it may also be passed.

2. And to obviate further controversy on this subject, he directs, in supersession of all former rulings on this subject, that all claims for mileage be passed by the Controller on certificate from Superintending or District Engineers that they have examined into each claim, and are satisfied that the journey has been performed for the benefit of the service.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers.—

No. 326. From the Consulting Engineer for Railways.
(Here enter No. 449, dated 29th August 1872.)

No. 327. From do. do.
(Here enter No. 459, dated 2nd September 1872.)

No. 328. From do. do.
(Here enter No. 471, dated 4th September 1872.)

No. 329. From do. do.
(Here enter No. 484, dated 11th September 1872.)

No. 330. ORDER THEREON, 23rd September 1872, No. 2,257.

RAILWAY, No. 59.

THE Governor in Council learns with satisfaction that the principal defects noticed in the first report of the Deputy Consulting Engineer for Railways respecting the Bangalore branch of the Madras Railway have now been or are in course of being remedied.

2. With respect to the question raised in paragraph 12 of the letter No. 471 from the Consulting Engineer for Railways, His Excellency in Council does not understand that the officers of the Company contest the obligation under which they are laid to adopt any measure which may be required by the Consulting Engineer for Railways acting under the direction of the Government.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 330-A. Read the following Docket from the Government of India, Public Works Department, (Irrigation,) dated Simla, 30th August 1872, No. 738-I.:—

FORWARDED to the Government of Madras in the Public Works Department, Irrigation Branch, for information.

(By Order,)
(Signed) G. SKIPWITH, Captain, R.E.,
Asst. Secy. to the Govt. of India.

From the Under Secretary to the Chief Commissioner for the Government of the Territories of His Highness the Maharajah of Mysore, to the Secretary to the Government of India, Public Works Department, Simla, dated Bangalore, 22nd June 1872, No. 134/11,610-I.

I HAVE the honour, by order of the Chief Commissioner, to forward, for the information of His Excellency the Governor-General in Council, the accompany-

ing memorandum drawn up by the Superintending Engineer of Irrigation on the manner in which it is proposed to deal with the tank system in Mysore as soon as the sanction of Government is received to the scheme proposed in this office No. 67-I., dated 4th March 1871.

2. I am to forward also thirty-five spare copies of the memorandum in accordance with orders contained in Government of India Circular No. 32 of the 3rd May 1872.

No. 330-B. ORDER THEREON, 23rd September 1872, No. 2,257-A.

IRRIGATION, No. 17.

COMMUNICATED to the Chief Engineer for Irrigation for report how far the systematic registry and management of tanks in Mysore proposed in Major Johnson's memorandum can be advantageously carried out in the Madras Presidency.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 331. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 5th September 1872, No. 472 :—

IN their Order, dated the 19th August 1872, No. 1,973, the Government stated that they would await the result of the Agent's application to the Directors of the Carnatic Railway for permission to run a trolly, for the convenience of the public, in conveying the weekly overland mail from Arconum southwards.

2. With reference to that order, I have the honour to submit a letter* from the Agent of the Carnatic Railway Company enclosing an extract from a letter received by him from the Board upon the subject in question. It will be seen that the Board express no opinion as to the employment of a trolly for carrying the weekly mails; but they say that, if the former train service is resumed, the views both of the Government and the Company will be met by altering the time of the morning train from 9-15 A.M. to 9 A.M.

*No. 544, dated 3rd September 1872.

3. In their orders noted in the margin, the Government decided on continuing the reduced train service for a further experimental period of six months from the 1st April 1872, and that period will expire upon the 30th instant.

No. 1,396, dated 6th June 1872.
,, 1,820, ,, 1st August ,,

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 3rd September 1872, No. 544.

WITH reference to your letter, No. 206, dated 27th August, I have the honour to submit the under-written extract from the Board's letter, No. 22-72, dated 9th August 1872, which I have received to-day, namely :—

"*One Train Service.*—In reference to your statement in Nos. 23 and 24, and the correspondence forwarded upon the subject of a mail service required by the Postal Department at 9 A. M. by special engine or trolly, I am desired to say the Board hope that by altering the time of the morning train to 9 o'clock, the hour specified by the Government as required for the Post Office, the views of the Government and the Company may be met if the old 9-15 A. M. train service is resumed.

"You will be good enough to submit these views of the Board to the Government at once."

No. 332. ORDER THEREON, 24th September 1872, No. 2,258.

RAILWAY, No. 60.

HIS Excellency the Governor in Council observes that the reply of the Carnatic Railway Board having signifi-

cance only in the case of a resumption of the double train service, it will be necessary to wait till that question has been decided (soon after the 30th September) before taking further steps in this matter.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 333. Read the following Endorsement of the Consulting Engineer for Railways, dated Madras, 30th August 1872, No. 454 :—

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 14th August 1872, No. 579.

WITH reference to your letter, No. 572, dated the 19th ultimo, and the Order of Government* which accompanied it, I have the honour to forward herewith, for the sanction of Government, revised estimates for alterations † and additions to waterway and raising gradient on the Neilgherry Branch Line, and for dwelling houses ‡ for Native Clerks at the Raichore Station, in which the carriage of material is shown at the rate of 4 Pies per ton per mile in accordance with G. O. No. 1,575 of 28th June 1872, and a separate charge entered for loading and unloading, no allowance being made for expenditure under these heads in the 4 Pies rate.

* No. 1,608, dated 4th July 1872.

† Rupees 9,738.

‡ Rupees 5,376.

2. In forwarding to me these revised estimates, the Chief Engineer remarks * as follows :—

* Letter No. 370, dated 8th August 1872.

"The rate for carriage of materials given in my estimates is strictly in accordance with the principles explained in my letter, No. 535, dated 10th October 1870, in reply to letter No. 1,437-R., printed in G. O. No. 2,294 of 22nd September 1870, and tacitly agreed to by Government. These principles are as follow :—That all materials shall be charged for at the rate of 1 Anna 6 Pies per ton per mile with the exception of heavy materials carried at low traffic rates, this charge providing for all expenditure under the heads loading and unloading.

"At the date (17th February 1872) on which I submitted the estimates under notice, the tariff in force on the Madras Railway for girders was as under—

"Girders, iron (exceeding 20 feet), no less charge than for 3 tons per truck used, 3rd Class.

"Girders, iron (20 feet and under), no less charge than for 3 tons per truck used, 2nd ,,

"The rates for second and third classes being 14 Pies and 18 Pies per ton per mile respectively clearly do not come under the head of low traffic rates. This classification had been approved of by the Government only nine days before my estimates were prepared (*vide* G. O., No. 379, dated 8th February 1872,) so it may be presumed that it contained their latest wishes on the subject of rates.

"It seems scarcely fair, therefore, to return for correction, and with the remark 'a full explanation should be submitted showing how the rate has been arrived at' an estimate that was prepared strictly in accordance with the latest information available. It will, I hope, be conceded that it was impossible for me to foresee the intentions of Government with reference to the 4 Pie rate."

3. With regard to the block system of telegraph for the Salt Cotaur Branch alluded to in paragraph 2 of your letter under notice, I learn from the Chief Engineer that the question will be more conveniently dealt with when forwarding the plans and estimates for doubling the line to the new Central Station discussed at the Stores Committee meeting held on the 6th instant.

4. The required information as to provision in the Budget and the date on which the sanction will lapse is given in red ink on the face of the estimates.

SUBMITTED to Government, with reference to Order of Government, dated 4th July 1872, No. 1,608.

2. The rates for the carriage of materials have been reduced to the present sanctioned rate of 4 Pies per ton per mile, but a charge for loading and unloading has been entered under the impression that this service is not provided for in the 4 Pies rate. This is a mistake, and the charge against Capital should be withdrawn; the estimate will then stand as under—

	RS.
Clerks' houses at Raichore	5,372
Alteration to Neilgherry Branch...	9,727

The Agent has been accordingly informed that these amounts are sanctioned under the authority of the Government of India conveyed in their letter of the 8th June, No. 771 G. R.

3. With reference to paragraph 2 of the letter from the Government of India, embodied in the Order of Government, No. 1,608 of 4th July last, I have the honour to explain that the Order of Government regarding the adoption of the 5 Pies rate for the carriage of materials had not been received at the time when the estimates referred to were framed, and the tariff charges for the conveyance of railway material were, therefore, entered in the estimates.

4. I hope shortly to be in a position to submit proposals for the apportionment, between Capital and Revenue, of the charges for the alterations at the Salt Cotaur Junction, as called for in paragraphs 3 and 4 of the Government of India letter.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 334. ORDER THEREON, 24th September 1872, No. 2,259.

RAILWAY, No. 61.

ORDERED that this letter be forwarded to the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 335. (DOCKET No. 2,260, dated 24th September 1872.)

FORWARDED to the Government of India, with reference to paragraph 2 of their Secretary's letter, No. 771 G. R., dated 8th June 1872. The information called for in paragraphs 3 and 4 will be submitted on its receipt from the Consulting Engineer.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 336. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 10th September 1872, No. 1,334 :—

WITH reference to G. O., No. 1,647, dated 8th July last, I have the honour to inform you that no funds are available under "Minor New Works Military" to meet the sum of Rupees 1,343 authorized to be paid to Contractor Lutchmana Moodelliar.

2. In G. O., No. 1,847, dated 6th August 1872, Government transferred to "Reserve" the sum of Rupees 400 surrendered under "Minor New Works Military" in the Kurnool District instead of allotting the same to the Bellary District as applied for. I therefore request that this sum may now be given for payment in part at least to the contractor, in the absence of Government being in a position to transfer a sufficient sum to discharge the claim altogether in the current official year.

No. 337 & 338. ORDER THEREON, 24th September 1872, No. 2,261.

ACCOUNT, No. 36.

THE Superintending Engineer of the 3rd Division is informed that the sum of Rupees 400 referred to in paragraph 2 has been appropriated; but, pending an allotment of funds, he will arrange for the payment of the sum of Rupees 1,343 to Contractor Lutchmana Moodelly.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 339. Read the following Docket from the Government of India, Public Works Department, (Account—Railway,) dated Simla, 2nd September 1872, No. 1,191-A.R. :—

COPY of the following forwarded to the Secretary to the Government of Madras, Public Works Department, Railway Branch, for information and guidance.

(By Order.)

(Signed) H. DRUMMOND, Colonel, R.E.,
Offg. Dy. Secy. to the Govt. of India.

General Order by the Military Department, No. 807 *of* 1872.

THE Right Honourable the Governor-General in Council is pleased to direct that the system of credit notes in payment of claims of Guaranteed Railways for the carriage of Government troops and stores (including followers, cattle, baggage, etc.,) shallbe brought into operation on and from the 1st September 1872.

2. The credit notes will be in the form annexed, and all Government officers using them are enjoined to exercise due care in filling up the number and description of vehicles provided for troops, followers, cattle, ammunition, baggage, stores, and the amount of charges payable in respect of them. The correct amount of fares and freight being entered in the order for payment at foot, the credit note will be made over to the Station Master or clerk and in due course presented by the Railway Company to the Commissariat officers in Calcutta, Madras or Bombay, as the case may be, for payment.

3. It has been arranged with the East Indian Railway Company :—

1st.—That in lieu of the existing baggage allowance of fifty-four and a half maunds for every one hundred men, a fixed railway allowance be substituted of twenty seers for each man, woman, and child.

2ndly.—That fractions of five seers be charged as five seers.

3rdly.—That fractions of less than one and a half pies be omitted, and fractions of more than one and a half pies charged as three pies.

4thly.—That any over-payments under the system now prescribed will be refunded by deduction from the next demand of the Railway Company, and that errors of less than 20 Rupees, on the side either of Government or the Railway Company, will be overlooked, and not brought forward for adjustment.

4. The credit note system of payment is authorized at present for dealings with the East Indian Railway Company, but it may, should it be desired, be extended hereafter to other Guaranteed Railway Companies.

Railway Warrant.

For the conveyance of troops, baggage, etc., by extra train from station to station, on day of 187 .

Vehicles.	Capacity for British and Native Troops.	No. of Vehicles provided.	Rate per Vehicle per Mile. RS. A. P.	Amount.
Breaks	......	......	......	......
Class, 1st	12 seats.	......	0 9 0	......
Composite	......	......	0 9 0	......
Class, 2nd	32	......	0 9 0	......
,, 3rd (7 compartments)	42	......	0 12 0	......
,, ,, (5 ,,)	30	......	0 9 0	......
Covered waggon	650 C. F.	......	0 8 0	......
Ammunition waggon...	650 ,,	......	1 0 0	......
Horse box, single	3 horses.	......	0 4 0	......
,, double	6 ,,	......	0 8 0	......
Cattle waggon	......	......	0 3 0	......
Invalid carriage	......	......	1 0 0	......
Carriage truck	......	......	0 3 0	......
(Vehicles chargeable as being short of the minimum number twenty, exclusive of the two break-vans.)	......	......	0 3 0	......
	......	......	......	......

Certified that extra train of vehicles, as above specified, required for movement of troops from to has been provided.

To the Government of India, Calcutta. } Signature of Commanding or Staff Officer.

Pay to the East Indian Railway Company or order the sum of Rupees as particularized above.

Rupees

Signature of Commanding or Staff Officer.

———Address.

Signature of Station Master or Clerk.

No. 340. ORDER THEREON, 24th September 1872, No. 2,262.

RAILWAY, No. 62.

COMMUNICATED to the Consulting Engineer for Railways for information and guidance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 341. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 466:—

G. O., No. 732, dated 14th March 1872.
* G. O., No. 260, M. S., of 26th April 1872.
,, ,, 1,277, dated 14th May.
,, ,, 1,589, dated 2nd July.
† No. 543, dated 1st August 1872.

WITH reference to the Proceedings of the Government of India, No. 284 A.R., dated 5th March 1872, and to subsequent orders,* I have the honour to submit a letter† from the Agent of the Madras Railway Company furnishing, for the approval of Government, proposals as to the percentages to be allowed to Revenue to represent the charge for supervision of any work on, or connected with, the open line which may be sanctioned as a charge against Capital.

2. The percentages named are—

Direction (including Home expenses) Audit and Accounts and Stores.	3½	On Indian cash outlay on Capital works.
Chief Engineer	1	
District Engineers...	6	On Indian cash outlay on Capital works on line maintained by Revenue.
Locomotive Department	25	Of the cost of the labour employed.

3. The reasons which cause the high percentage of superintendence in the Locomotive Department are thus explained in a letter from the Locomotive Superintendent.

"The high cost of superintendence is the result of the great disproportion that exists between the cost of imported skilled labour which is used and charged as superintendence, and the local labour which is made use of for the purpose of doing the work. For instance, European Foremen in charge of workshops are paid

Rupees 350 per month, whilst the labour they supervise averages in the case of a native mechanic about 13 Rupees, and in that of the ordinary labour about 6 Rupees per month, or an average of, say 8½ Rupees per month, allowing one labourer for every mechanic. Thus the pay of one Foreman represents the sum earned by forty-one of his men, and therefore if he had charge of 164 men this one item of superintendence amounts to 25 per cent. on the labour of these men. It will therefore be readily understood that, with the addition of the proportion of office salaries and expenses, the amount chargeable to superintendence must form a very large item in the cost of all mechanical work."

4. It will be noticed from the accompanying letter* that the Examiner of Railway Accounts considers the percentages named to be suitable to the circumstances of the Madras Railway, and I have the honour to recommend them for approval.

* No. 413, dated 20th August 1872.

From the Examiner of Railway Accounts, to the Consulting Engineer for Railways, dated Madras, 20th August 1872, No. 413.

In reply to your memorandum No. 728 of the 16th instant, forwarding correspondence as per margin relative to percentages of superintendence to be charged to Capital by the Madras Railway (herewith returned), I have the honour to state that I consider the percentages named to be suitable to the circumstances of this Railway.

No. 2,336 of 1872, dated 10th August 1872, from Consulting Engineer, Bombay, with enclosures Nos. 543 of 1st August 1872 and 567 of 8th August 1872, with enclosure from Agent of the Madras Railway.

2. The percentage named by the Locomotive Superintendent is a high one, but it represents the proportion borne by his superintendence to labour. The amount chargeable to Capital establishment by the application of this percentage will be considerably under the amount formerly charged. The average amount charged to this head for the six months ending April 1872 was Rupees 2,928-5-2. If the 25 per cent. be applied to the average labour during the same six months the charge for establishment would be Rupees 1,872-9-10.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 1st August 1872, No. 543.

With reference to paragraph 4 of your letter No. 433 of the 10th ultimo, I have the honour to submit, for the approval of the Government, the following percentages to be allowed to Revenue, to represent the charge for supervision of any work on, or connected with, the open line as may be sanctioned as a charge against Capital namely:—

	Percentage.	
Direction (including Home expenses) Audit, and Accounts and Stores	3½	On Indian cash outlay on Capital works.
Chief Engineer	1	On Indian cash outlay on Capital works.
District Engineer	6	On Indian cash outlay on Capital works on line maintained by Revenue.
Locomotive Department	25	Of the cost of the labour employed.

No. 342. ORDER THEREON, 24th September 1872, No. 2,263.

RAILWAY, No. 63.

ORDERED that the proposals made in this letter be submitted for the sanction of the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 343. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Govenment of India, P.W.D., dated 24th September 1862, No. 2,264.

RAILWAY, No. 64.

From Government of India, No. 284 A. R., dated 5th March 1872.
To Government of India, No. 911 A. R., dated 5th April 1872.
To Government of India, No. 1,278 A. R., dated 14th May 1872.
From Government of India, No. 785 A. R., dated 13th June 1872.

SIR,—Adverting to the correspondence marginally noted, I am directed to forward the proposals made in the accompanying letter from the Consulting Engineer in regard to the percentages to be allowed to Revenue to represent the charge for supervision of works carried out from Capital on the open line of the Madras Railway.

2. The only rate apparently requiring particular notice is that set down for the Locomotive Department, which has been fixed with special reference to the circumstances of this Company, where the charges for supervision as compared with the labour actually employed are such as would seem to demand a high percentage. The Examiner of Railway Accounts considers the rate proposed to be equitable, and explains that it is considerably under that which has heretofore been charged. I am accordingly to submit these percentages for the favourable consideration of the Government of India.

No. 344. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 10th September 1872, No. 483:—

No. 732, dated 14th March 1872.
No. 1,626, dated 5th July ,,
* No. 550, dated 7th September ,,

WITH reference to the Proceedings of the Government of India, No. 284-A. R., dated 5th March, and 798-A. R., dated 17th June 1872, I have the honour to submit a letter* from the Agent of the Carnatic Railway Company furnishing, for the approval of Government, proposals as to the per-centages to be applied to the Revenue expenditure to represent the amount to be debited to Revenue by credit to Capital for general charges.

2. The plan pursued has been to find out the per-centage which the total cost of direction bears to the total expenditure. This has worked out to $2\frac{1}{2}$ per cent; the divisible agency and home establishment being Rupees 44,155 per annum, and the expenditure about Rupees 18,14,448.

3. The Examiner of Railway Accounts suggested the above manner of working out the per-centages, and I beg to recommend it for approval.

From the Agent and Manager of the Carnatic Railway Company, to the Consulting Engineer for Railways, dated Madras, 7th September 1872, No. 550.

WITH reference to your letter No. 220,* I have the honour to state that, in communication with the Government Examiner, I have agreed to adopt the per-centage recommended by him,

* Dated 4th September 1872.

as stated in paragraph 2 of your letter under reply, namely, that 2½ per cent. of Indian expenditure for agency and stores establishments, including Agency Office contingencies and of English expenditure for direction, be debited to general charges, Revenue account, and the remainder to the proper capital head.

2. In this arrangement it was understood in our conversation upon the subject yesterday, when you were present, that the rent for these offices was to continue to be divided in moieties to the Engineering and Agency Departments as previously sanctioned, the agency portion being subject to sub-division at the above per-centage.

3. I shall feel obliged by your authorizing the carrying out of this arrangement, when entries to adjust the accounts, as from the 1st April last, shall be made in accordance with the G. O., No. 732, dated 12th March 1872, forwarded in your letter No. 62, dated 16th idem.

No. 345. ORDER THEREON, 24th September 1872, No. 2,265.

RAILWAY, No. 65.

ORDERED that these papers be forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 346. From the Secretary to the Government of Fort Saint George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 24th September 1872, No. 2,266.

RAILWAY, No. 66.

SIR,—In continuation of my letter No. 2,264, dated 24th September 1872, forwarding, for the sanction of the Government of India, proposals in regard to the per-centages to be allowed to Revenue to represent general charges on the Madras Railway, I am directed to submit the accompanying letter showing the per-centages which are considered equitable on the Carnatic Railway. It will be observed that the method of arriving at these rates has the approval of the Examiner of Railway Accounts.

No. 347. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 2nd September 1872, No. 460 :—

INCONVENIENCE having been experienced in this office through the want of a concise code of rules to regulate the travelling allowances of the officers of the Engineering Department on the Great Southern of India and Carnatic Railways, I have the honour to submit, for the sanction of Government, a draft of the rules which, with the concurrence of the Agents, it is proposed to bring into operation in supersession of all previous orders on the subject.

2. The rules now proposed are in assimilation with those in force on the Madras Railway.

ENGINEERING DEPARTMENT ALLOWANCE RULES.

1. *Nature of Allowances.*—Allowances are of three kinds :—

I.—Fixed or monthly allowance.

II.—Travelling allowance, (*a*) daily, (*b*) mileage.

III.—Leave allowance.

2. *Definition of Travelling.*—Travelling means an actual *bona fide* change of camp or halting place ; a ride out from camp or head-quarters of 6 miles and back the same morning does not constitute "travelling," nor entitle to draw travelling allowance.

3. *Mode of calculating distances.*—In calculating distances travelled, any distance under 5 miles is not to be counted ; 5 miles and above will be charged as 10 miles. Thus 14 miles will be counted as 10 miles, whereas 15 miles will be counted 20 miles.

4. *Definition of District.*—The term district means the length of line (varying from 10 to 20 miles) marked as such on the working surveys and sections, such lengths as are usually placed in immediate charge of one Assistant Engineer.

5. *Chief Engineer, fixed allowance.*—The Chief Engineer has a fixed allowance of Rupees 105 per mensem.

6. *Travelling allowance in marching.*—The Chief Engineer when travelling any distance above 5 miles otherwise than by rail is allowed Rupees 5 per 10 miles in lieu of all other allowances.

7. *Travelling allowance by rail.*—In proceeding on duty, the Chief Engineer will travel by rail when practicable, the actual expenses so incurred not exceeding fare for himself and two servants, luggage, tent, two horses, and carriage will be allowed in addition to Rupees 5 per diem, instead of fixed allowance for such days as he is actually and necessarily travelling or halting on duty en-route.

8. *Assistant Engineer.*—An Assistant Engineer (of any rank) on reporting himself at engineering head-quarters is granted a fixed allowance of Rupees 75 per mensem, which is increased to Rupees 105 per mensem if he is placed in charge of two or more districts, or on such special duty as may render it advisable. This is to cover all charges in marching, keeping up tents, horses, conveyances, etc., etc. Fourth-class Engineers will draw a special rate of Rupees 60 unless in independent charge when the allowance will be Rupees 75 per mensem.

9. An Engineer travelling otherwise than by rail on duty beyond the limits of his charge is allowed, instead of his fixed allowance, Rupees 3 per 10 miles, and in lieu thereof Rupees 3 per diem for the days upon which he halts on duty. Fourth-class Engineers will receive Rupees 2 per 10 miles, or per diem.

10. Engineers are to travel by rail whenever practicable, and when so travelling they are allowed Rupees 3 per diem, instead of fixed allowance, for such days as they are actually and necessarily travelling or halting on duty en-route, in addition to the actual railway charges so incurred not exceeding fare for himself, two servants, luggage, tent, one horse and a carriage to each Engineer.

11. *Allowance on Leave.*—Engineers of all grades employed on construction when on privilege or short sick leave will draw their fixed allowance or tentage, namely, Chief Engineer, Rupees 105 per mensem, and Assistant Engineers Rupees 75 per mensem for the first two months, after which no allowance will be granted. Engineers employed on permanent-way will not be entitled to any allowance for "tentage" during their absence from duty.

12. Engineers on furlough or returning to England on sick certificate will receive no allowance.

13. *Allowance to Subordinates.*—The following scale of allowances will be granted to all other subordinates of the department :—

Monthly salary.	Rate per diem or every 10 miles.		
	RS.	A.	P.
On Rupees 300 and over	2	8	0
" " 200 and under 300	2	0	0
" " 100 " " 200	1	8	0
" " 50 " " 100	1	0	0
" " 25 " " 50	0	8	0
" " 15 " " 25	0	4	0
" " 7 " " 15	0	2	0
under Rupees 7	0	1	0

14. The rate per diem is to apply when an employé is appointed to a district, or length, or when halting on duty in travelling, and the rate per 10 miles is to apply to any one travelling otherwise than by rail outside the limits to which he stands appointed.

15. They will be required to travel by rail whenever practicable, and their actual expenses will be defrayed by the Company in addition to the allowance for the days necessarily occupied in the journey.

16. In the case of a servant of the Company being required to travel by any special mode of conveyance, such as transit, the expenses of which shall be known to exceed the travelling allowance granted, instead of such allowance the actual cost of the special conveyance will be disbursed together with the travelling allowance per diem for the days necessarily occupied in so travelling.

17. In every case claims for travelling allowance must be supported by a statement showing date of departure, distance travelled, days halted, date of arrival at destination, and on what duty.

18. The Chief Engineer has power to withhold any of the afore-mentioned allowances, or to commute any variable one to a fixed monthly allowance provided such fixed allowance shall not exceed the full allowance of the class or grade.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 348. ORDER THEREON, 25th September 1872, No. 2,267.

RAILWAY, No. 67.

THE draft rules submitted with this letter to regulate the travelling allowances of the officers of the Engineering Department on the Great Southern of India and Carnatic Railways are approved subject to the sanction of the Government of India, which will be now applied for.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 349. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 25th September 1872, No. 2,268.

RAILWAY, No. 68.

SIR,—The want of a concise code of rules to regulate the travelling allowances of the officers of the Engineering

Department on the Great Southern of India and Carnatic Railways being much felt in the Consulting Engineer's Department, Lieutenant-Colonel Shaw-Stewart submits for sanction the accompanying draft of the rules which he has prepared in communication with the Agents of those Companies. The rules are in assimilation with those in operation on the Madras Railway, and His Excellency the Governor in Council has accorded to them a conditional approval, subject to the confirmation of the Right Honourable the Governor-General in Council, which I am now directed to solicit.

No. 350. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 14th September 1872, No. 496 :—

WITH reference to paragraph 11 of Public Works Department Resolution, No. 830-5 A. R., of the 26th June 1872, I have the honour to report, for the information of the Government of India, that, in accordance with an application from the Agent of the Carnatic Railway, I have authorized the transfer of a sum of Rupees 56,000, to meet expenditure to the 31st March 1873 on account of the establishment employed on the survey operations of the Carnatic Railway, from the allotment in Schedule D. in the Budget Estimate for 1872-73 for the Establishment on Construction.

2. In making the application the Agent explained that the sum sanctioned in the Budget Estimate for 1872-73, Schedule A. for Preliminary Expenses, "Establishment," Rupees 50,772, would be exhausted by the close of the present month.

3. The expenses monthly amount to Rupees 9,341, exclusive of the proportion chargeable to general charges Revenue Account, and for the half-year will be about Rupees 56,046.

4. The plans and estimates for the construction of the line to Cuddalore have been received in this Office, and are now under examination; but the date on which work will be commenced is of course uncertain.

No. 351. ORDER THEREON, 25th September 1872, No. 2,269.

RAILWAY, No. 69.

ORDERED that this letter be forwarded for the information of the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 352. (DOCKET No. 2,270, dated 25th September 1872.)

COPY of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 353. Read the following letter from the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 29th August 1872, No. 2,007 :—

IN continuation of this office letter No. 1,986, dated 27th August 1872, I have the honour to forward copy of a letter from the Executive Engineer in charge of No. 1 or Eastern Delta Range of this district, reporting a loss of Rupees 302-10-3 on the brick-work of the new Covoor lock near Cocanada. As I have withdrawn my recommendation in favour of the Overseer for promotion, in accordance with the principle approved by Government in G. O. of the 2nd November 1871, No. 2,774, I am unable to support the Range Officer's request that the Overseer should be further called upon to make good the loss, and the more so as the locality is most easy of access, and the work should have been far better checked. I must therefore solicit the Government to permit me to write this off to "profit and loss."

1 Copy of letter No. 342, dated 24th August 1872, from the Executive Engineer in charge No. 1 Range, Godavery, with 4 Enclosures. To be returned.

2. I regret to say I am unable to endorse the Range Officer's excuse that he was unable to attend to this work. I have been unable to make any favourable mention of the discharge of his range duties, and have allowed, the circumstance of two deltas being in his hands at once, some consideration, but further I cannot admit.

3. The Overseer is an old Government servant, and has been employed on the works since the anicut was begun; and I regret very much I have been unable to recommend him for promotion on this occasion, for he has done, in former years to my certain knowledge, right good work.

From the Executive Engineer in charge of No. 1 Range, Godavery, to the Acting Superintending Engineer, 1st Division, dated Dowlaishweram, 24th August 1872, No. 342.

I HAVE the honor to bring to your notice the high cost of brick-work on the Covoor lock. I regret to say that Overseer Venkataratnam cannot afford any satisfactory explanation regarding it. I forward a letter and enclosures from Overseer Venkataratnam from which it appears that he throws the whole blame on the Maistry and Lock Superintendent, and forwards a statement showing that some work has been incorrectly charged to the item of brick-work; this is, I believe, partly true, but the statement sent is not true. I forward a revised one, and the result is that I consider an amount of Rupees 302-10-3 has been lost to Government, and should be made good. In the Overseer's statement credit is given for Rupees 155-3-0 on account of filling in dam, etc., charged in error to brick-work. I regret to say that his measurements are utterly wrong. Mr. Larminie (who knows more of the work than I do, having inspected it oftener) has, as well as he, measured the filling in dam, the result is a total of 1,724 cubic yards. For this money has been paid and charged as follows :—

	RS. A. P.
699 Cubic yards, at 1 Anna...	43 9 0
Daily Coolies, say 1,008 cubic yards, cost...	63 0 9
1,707 yards.	106 9 9

As this comes so near Mr. Larminie's measurement, I do not think that there can have been any error in the accounts regarding the filling in, but I consider Rupees 10 may fairly be allowed

for cutting channels, Rupees 20 for centrings, Rupees 15 for the labour of the plastering, and Rupees 10 for contingencies, making a total of Rupees 55. This makes the cost of labour for 40 cubic yards of brick-work, Rupees 442-10-3, about Rupees 11 a yard.

2. The work done is very good; all the bricks were cut; similar work at Thossipoody and Chintapilly locks cost Rupees 3-4-0-and 4-14-0 per cubic yard for labour. I think that a fair allowance for Covoor lock is Rupees 3-8-0 a cubic yard, or Rupees 140 for the 40 cubic yards, leaving Rupees 302-10-3 unaccounted for.

3. I regret to say that after every inquiry and examination of the books, I can give no satisfactory explanation of the case, but can only say that I do not for a minute believe that the number of bricklayers and coolies entered in the books ever worked on the lock. Venkataratnam lays the whole blame on the Lock Maistry and Maistry on the work; he reports that he himself paid the coolies and bricklayers charged for, but acknowledges that he never attempted to check the work done by them, and in fact according to his account left it entirely to the 2nd Maistries. K. Venkataratnam is a very old Government servant, has been for years carrying on masonry works, and I cannot for a moment believe that he himself paid this money away (at the rate of about 20 bricklayers for a cubic yard of work), without knowledge or examination. I am well aware that he does not understand much of accounts, and in fact can only just read and write; but I think that he understands from his experience better than most how much work a bricklayer should do, and as a rule makes him do it.

4. I can therefore do nothing else but impute to Overseer Venkataratnam either fraud or gross carelessness and neglect of duty; as he is of long service and bears a high character, I prefer doing the latter, and with your sanction propose that he should be directed to pay this money into the cash chest to be credited to the work; if it were not for Venkataratnam's long service and good character, I would propose his dismissal.

5. The Lock Maistry who kept the Nominal Rolls has been removed to Yerrapotharam lock; the Bricklayer Maistry dismissed.

6. I regret much that I have not been able to report this before; the reason of the delay is as follows.

7. In June it was brought to my notice that there was a heavy overcharge on the item of brick-work. I wrote to Mr. Larminie to make inquiries; in July I received his report, and wrote to Venkataratnam for explanation. I went to Covoor lock as soon as I could (at the end of July), but was unable to report upon the matter until I could obtain from Mr. Larminie the measurements of the filling in.

8. I certainly ought to have known of the excess before June. I had visited the work in May, but I regret to say I did not then go into the brick-work accounts. I was fully engaged the day I was there in settling the accounts of the materials in hand, owing to a dispute regarding them between Overseers Venkataratnam and Ramanah.

No. 354. ORDER THEREON, 25th September 1872, No. 2,271.

ACCOUNT, No. 37.

THE loss of Rupees 302-10-3 reported in this correspondence will remain charged against the Covoor lock and be passed by the Controller.

2. His Excellency the Governor in Council draws the conclusion from these papers that the reconstruction of the Central Delta as an independent Range, ordered in G. O. No. 1,586 of 1st July, has been opportune, and trusts that it will result in better supervision of work than is now reported to prevail.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 355. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 13th September 1872, No. 493 :—

WITH reference to the Orders of Government dated the 17th and 22nd ultimo, Nos. 1,960 and 2,001, I have the honour to state that upon receipt of the latter order I requested the Officiating Deputy Consulting Engineer to communicate with Major Pemberton, and to arrange for the transfer to Wuddi of the broad gauge material now lying at Negapatam. Captain Thompson accordingly ascertained Major Pemberton's views with regard to the transfer of the material, and proceeded, some days ago, to Negapatam to make the necessary arrangements with the Agent of the Great Southern of India Railway Company, to whom the proceedings of Government upon the subject had been duly communicated.

2. I have, however, to-day received from Mr. Betts the enclosed letter,* from which it will be seen that he does not consider himself at liberty to deliver the material until the price has been agreed on. Under the circumstances I do not see what can be done, but to save time I have telegraphed as follows to the Secretary to the Government of India, Public Works Department :—

* No. 4,678, dated 11th September 1872.

"Your letter of 25th July one thousand and seven.

"Agent, Great Southern, still declines to deliver material until price is settled. Await instructions."

From the Agent of the Great Southern of India Railway, to the Consulting Engineer for Railways, dated Negapatam, 11th September 1872, No. 4,678.

UPON receipt of your letter No. 348 of the 29th ultimo, I telegraphed the following message to the address of this Company's Secretary in London :—"Government require material for Nizam's Railway, Directors settling terms with India Office. Telegraph instructions." To which I have received the following reply from the Chairman of the Board of Directors :—"London, 9th September. Telegram received. Letters May 3rd, June 21st, gave full instructions. Price being agreed you can deliver."

2. From this it will be seen that I am instructed to deliver upon prices being agreed to.

3. Will you please intimate this to Government, as if the settlement of the terms of purchase is transferred to England, the delivery of the material must of necessity be delayed.

No. 356. ORDER THEREON, 25th September 1872, No. 2,272.

RAILWAY, No. 70.

ORDERED that copies of these letters be forwarded for the information of the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 357. (DOCKET No. 2,273, dated 25th September 1872.)

COPY of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 358. Read the following letter from the Officiating Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 25th June 1872, No. 690 :—

I HAVE the honour to forward, for the orders of Government, the enclosed letter No. 112, dated 7th May 1872, in original, from Mr. W. Fraser, C. E., Executive Engineer of Bellary, regarding certain claims for compensation from one Lutchmana Moodeliar, a Contractor for timber-work for the (1) European Female Hospital, (2) Civil and Sessions Court-house, and (3) Royal Horse Artillery Guard-room, respectively, at Bellary.

2. To give a better insight into this matter, I shall enter into the history of each building as given above, so far as concerns the question of compensation.

European Female Hospital.—The original design for this building was agreeably to the Standard Plan (see G. O. No. 1,578, dated 13th May 1869,) which provided for an upper storey; the estimate amount was Rupees 60,450. The orders marginally noted will explain the cause of alterations in the design which reduced the estimate to Rupees 38,000.

G. O., No. 3,844, dated 7th December 1869.
,, ,, 895, ,, 30th March 1870.
,, ,, 1,536, ,, 24th June ,,

3. From the Progress Report I find that the work was commenced in the month (May 1869) in which it was sanctioned, and a contract for the wood-work for both lower and upper storey was entered into in August of that year; upwards of four months after (that is in January 1870) it was intimated to the contractors, on the receipt of G. O. No. 3,844 of December 1869, that the design was being altered, and they were not to proceed with the timber-work of the upper storey. It was quite possible for the contractor to have prepared the timber-work between the date of the bond and the date of notice of alteration, as all the work was made up at Madras under the supervision of one or other of the contractors, and time was of value to them as they are Bellary people and consequently have other work of their own to attend to.

4. It, however, does not appear clear to me why the order (see C. under paragraph 3), not to go on with the lower storey joists, was issued only on the 17th March 1870, and the object of the issue of this order, and under what circumstances the scantlings of timber had been altered, although better scantlings had been given.

5. It must be admitted that contractors would be much hampered if they enter into contracts for certain work, and when it is well in hand to find their work stopped or alterations made. It is particularly so in the case of timber contracts, for the smallest alteration would in most cases cause heavy loss if timber has already been prepared.

6. I therefore beg to recommend that the claims for compensation be admitted, and that the timber on the hands of the contractor be taken up on valuation, as the same can be utilized as required and charged to works on which used. The total amount for this is Rupees 1,808 (*i. e.*, Rupees 1,074 compensation, and Rupees 734 value of timber to be brought on to stock.)

Civil and Sessions Court-house.—This work has been completed at a cost of Rupees 46,020—G. O. No. 799, dated 10th March 1866, and G. O. No. 1,840, dated 2nd August 1870, are the orders sanctioning the above expenditure.

8. No authority appears in this office for the omission of the ridge ventilator referred to, but it doubtless was decided not to provide such in personal consultation with Colonel Moberly, and from what I see the omission seems rather to improve the appearance of the building, and ventilation is otherwise amply provided for.

9. However, taking the above in conjunction with what Mr. Fraser says in paragraph 4 marked F. and G., there seems some irregularity in Colonel Palmer's proceedings which, had he been here, would doubtless have called for very full explanation, as his action is not supported by record in this office which might show that Colonel Moberly recognized these intentions.

10. It may perhaps be necessary for me to here explain that such items as "putting up charges" are admitted in connection with timber-work, for it is not always that when a contractor undertakes to supply the wood-work, for instance, of a roof, he also undertakes to fix the same. It has been usual to allow a sum of 8 Annas per cubic foot for such work, and this sum comes out of the estimate rate for the timber.

11. It will be seen from (see H) what Mr. Fraser says, that Colonel Palmer did actually promise to compensate the contractor from the amount saved by the deviation from original plan referred to in paragraph 8 above. The contractor is not blameable, for it was natural enough he would take all he could get to recoup the loss he sustained in having to alter the scantlings of the wood-work as stated by Mr. Fraser.

12. The claim on this head is Rupees 102 for compensation, which I would recommend to be paid to Lutchmana Moodeliar.

13. *Guard-room for the Royal Horse Artillery, Bellary.*—G. O. No. 2,355, dated 19th July 1869, is the order sanctioning this work on an estimate amounting to Rupees 16,560.

14. The particulars referring to this work are very similar to those of the Court-house, with the exception that the contractor could not be compensated on savings effected under other heads. The claim for compensation recommended is Rupees 201, which I trust may also be sanctioned.

15. The aggregate of the estimates of the above three works is Rupees 1,00,580. The amount proposed to be given as compensation is Rupees 2,111, which gives a per-centage of about 2·09, which is so trifling, that had the estimates been actually exceeded by it, it would have been quite within the province of the Controller of Public Works Accounts to make the necessary adjustments, but the circumstances connected with these works compel me to obtain the orders of Government on such indirect claims which have only recently been brought officially to notice.

16. From Colonel Moberly's remark in the margin opposite to paragraph 1 of Mr. Fraser's letter, Government will observe that from personal information that officer was aware of the losses the contractor had, and was sustaining by the alterations referred to; but no official action appears to have been taken beyond what Colonel Moberly himself says. It must also be apparent that Mr. Fraser must have been aware of the state of affairs shortly after he took charge of the Bellary Range, and I regret that he should not have represented matters clearly and officially previous to Colonel Moberly's departure to Europe, as the records

before him and personal acquaintance with the various circumstances would have enabled that officer perhaps more satisfactorily to clear up this matter. It is time that Colonel Moberly did receive Mr. Fraser's report in question before he had made over charge, but time did not suffice for the collection of all the information required to then put the case as clearly as possible before Government.

17. With his letter No. 188, dated 14th June 1872, Mr. Fraser forwards a letter from the contractor in which the man expresses his willingness to accept the sum of Rupees 2,111, which Mr. Fraser, after entering into all the details of the man's claims, has set down as the amount fairly due for the losses sustained.

No. 359. ORDER THEREON, 25th September 1872, No. 2,274.

MILITARY WORKS, No. 12.

His Excellency the Governor in Council observes that the plan of the European Female Hospital in Bellary, the modification of which gave rise to the claims under consideration in the foregoing papers, was sanctioned in May 1869, the contracts for the supply of timber being signed in the following August; that the officer in charge of the works notified to the contractors the proposed change of design in January 1870, and ordered further modifications in March of the same year. There being, as now appears, reason to believe that the wood-work had been prepared in accordance with the original design prior to the receipt of instructions modifying the scantling, His Excellency resolves to sanction the compensation and transfers to stock proposed by the Superintending Engineer, who will at once make the necessary adjustments in the accounts, submitting revised estimates if necessary.

2. His Excellency observes that the necessity for adjusting these claims ought to have been perfectly apparent to the Superintending Engineer of the Division at the time of the submission of the revised estimates, which were sanctioned in G. O. No. 1,536, dated 24th June 1870, and the omission to deal with them at that time is only another instance of the defective management of the 3rd Division, so frequently forced on the notice of Government. In the absence of any explanation on the part of Colonel Palmer, His Excellency will only observe that the proposal to compensate the contractor by charging in the accounts and paying him the value of work the execution of which had been intentionally omitted is so reprehensible as to be almost unintelligible, and it will be dealt with in the final disposal of the questions involved in the timber-yard deficiencies lately under the consideration of Government.

3. His Excellency agrees with the Officiating Superintending Engineer in regretting that Mr. Fraser should have neglected to bring forward these claims for adjustment until twelve months after he had taken charge of the range; but is willing to believe that some justification for the delay may be found in the discreditable state of the range accounts which has lately been brought to the notice of Government. His Excellency resolves to call upon the Superintending Engineer of the 3rd Division to report with the least practicable delay whether there are any further claims, the prompt adjustment of which may have been similarly neglected.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 360. Read the following letter from the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 7th September 1872, No. 1,301 :—

I HAVE the honour to inform you that the sum of Rupees 170, sanctioned in G. O. No. 2,141 of 19th August 1871, to adjust claims for work done in connection with the Taluq Cutcherry at Tadputry, was not paid by the late Mr. Brosnahan, then in charge of Ghooty Range. The cause of the omission cannot now be ascertained.

2. I therefore request that a fresh allotment may be sanctioned to settle the claims of the contractor. If funds are not available under "Reserve," the amount can be met by transfer from the provision of Rupees 15,000* for the Sub-Collector's Cutcherry at Ghooty item No. 15 in the current year's Provincial Budget.

	RS.
* Estimate	12,000
Amount available under paragraph 2 of G. O., No. 1,976-A., dated 20th August 1872...	3,000
Total...	15,000

No. 361. ORDER THEREON, 25th September 1872, No. 2,275.

ACCOUNT, No. 38.

THE Government sanction the payment of the sum of Rupees 170; but as the sum of Rupees 3,000 referred to in paragraph 2 has been already appropriated, and no funds are at present available, the Superintending Engineer will report from what other source he would propose to transfer the amount which is small.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 362. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 13th September 1872, No. 492 :—

WITH reference to paragraph 11 of Public Works Department Resolution No. 830-5 A.R. of the 26th June 1872, I have the honour to report, for the information of the Government of India, that, in accordance with an application from the Agent of the Madras Railway Company, I have authorized the transfer of the sums marginally noted required for the completion of ten horse-boxes, sanctioned in the Order of Government, No. 3,004, dated 12th December 1870, from the amount of Rupees 27,800 provided in the Budget Estimate for 1872-73 for the construction of ten third-class carriages.

G O., No. 1,754, dated 24th July 1872.

	RS.	A.	P.
Indian outlay	4,661	6	8
English „	10,577	9	1

2. No provision has been made in the Budget Estimate for 1872-73 for the ten horse-boxes, and I quote the Agent's explanation regarding the manner in which the amount is available from the estimate for the construction of the ten third-class carriages.

"Mr. Wright explains that, owing to the delay which has taken place in the case of the night composite carriages and horse-boxes, he has been able to proceed much more rapidly than he contemplated with the construction of the third-class carriages mentioned above, and that they were consequently finished at the end of April last, the amount expended on them during that month being only Rupees 36-8-4, which taken from the amount provided under this head in the Budget for the present official year (Rupees 27,800) leave a margin of Rupees 27,763-7-8 still available."

No. 363. ORDER THEREON, 25th September 1872, No. 2,276.

RAILWAY, No. 71.

ORDERED that this letter be forwarded for the information of the Government of India.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 364. (Docket No. 2,277, dated 25th September 1872.)

COPY of the above forwarded to the Government of India.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 365. Read the following Memorandum of Capital Account (brought down to the 30th June 1872) showing the sums paid into, and withdrawn from, the Government Treasuries.

MADRAS RAILWAY.

Amount paid by the Railway Company		£ 10,159,412 0 0
Do. withdrawn in England		£ 4,297,868 0 0
		£ 5,861,544 0 0
Sums withdrawn in India up to 30th June 1872	Rs. 8,96,26,659 1 9	
Deduct— Amount transferred from Revenue Account, as per orders of Government, including transfer adjustments to 30th June 1872.	Rs. 2,82,20,207 2 5	
Cheques passed from 1st July to 11th Sept. 1872 for Rs. 3,25,000, or £29,791-13-4.	Rs. 6,14,06,451 15 4 or	£ 5,628,924 15 3
	30th June 1872, Balance...	£ 232,619 4 9

GREAT SOUTHERN OF INDIA RAILWAY.

Amount paid by the Railway Company		£ 2,870,708 0 0
Do. withdrawn in England		£ 912,229 0 0
		£ 1,958,479 0 0
Sums withdrawn in India up to 30th June 1872	Rs. 100,45,370 0 8	
Deduct— Amount transferred from Revenue Account, as per orders of Government, including transfer adjustments to 30th June 1872.	Rs. 14,53,528 13 2	
Cheques passed from 1st July to 11th Sept. 1872 for Rs. 1,89,000, or £17,325.	Rs. 85,91,841 3 6 or	£ 787,585 8 11
	30th June 1872, Balance...	£ 1,170,893 11 1

CARNATIC RAILWAY.

Amount paid by the Railway Company			£	791,242 0 0
Do. withdrawn in England			£	72,768 0 0
			£	718,474 0 0
Sums withdrawn in India up to 30th June 1872	Rs.	2,17,332 0 0		
Deduct— Amount transferred from Revenue Account, as per orders of Government, including transfer adjustments to 30th June 1872.	Rs.	50,377 9 8		
	Rs.	1,66,954 6 4	or £	16,695 8 9
		30th June 1872, Balance...	£	701,778 11 3

Cheques passed from 1st July to 11th Sept. 1872 for Rs. 18,000, or £1,800.

MADRAS,
13th September 1872.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

To the Secretary to Government, Public Works Department, Fort St. George.

A copy of this memorandum has been furnished to the Accountant-General.

No. 366. ORDER THEREON, 25th September 1872, No. 2,278.

RAILWAY, No. 72.

ORDERED that this statement be forwarded to the Home Government.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 367. From the Secretary to the Government of Fort St. George, Public Works Department, to the Under-Secretary of State for India, dated 25th September 1872, No. 2,279.

RAILWAY, No. 73.

SIR,—With reference to the letter from this department, No. 1,994, dated 21st August 1872, I am directed by His Excellency the Governor in Council to forward to you, for submission to the Right Honourable the Secretary of State for India, the accompanying statement furnished by the Consulting Engineer showing the Capital Account of the Railway Companies of this Presidency brought down to the 30th June 1872.

No. 368. Read the following Circular from the Government of India, Public Works Department, (Railway,) dated Simla, 3rd September 1872, No. 39 :—

Standard dimensions for Indian Railways.

READ—

Public Works Department Circular No. 35, Railway, dated the 1st August 1872.

Read also—

Memorandum by the Consulting Engineer to the Government of India for State Railways, dated the 8th August 1872.

OBSERVATIONS.—The curves on the main lines of Guaranteed Railways out of stations are, it is believed, nowhere of short radius, but in the curves within the stations it is possible that the body of a long carriage on a bogie frame when traversing a curve would approach too close to a fixed structure, and information on this question is required.

ORDER.—Ordered that this Resolution, together with the memorandum now read, be communicated to the Governments of Madras and Bombay in the Public Works Department, (Railway,) to the Chief Commissioner of the Central Provinces, and to the Resident at Hyderabad; also to the Consulting Engineers to

the Government of India for Guaranteed Railways at Calcutta, Lahore, and Lucknow, for inquiry and report whether with a view to the possible introduction of longer carriages on bogie frames, it is considered desirable to modify the standard maximum dimensions for moving structures.

Ordered also that this Resolution be communicated to the Consulting Engineer to the Government of India for State Railways for information, with a request that he will state whether, in the case of State Railways, he would recommend a decrease in the maximum dimensions of moving structures, or an increase in the minimum dimensions of fixed structures; and to the Officers in charge of State Lines of Railway* named in the margin, for information.

Officiating Chief Engineer, Punjab Northern State Railway.
Engineer-in-Chief, Indus Valley State Railway.
Superintending Engineer, Agra District, Rajpootana State Railway.
Do. do. Delhi District do. do.
Do. do. Holkar State Railway.

(Signed) H. DRUMMUND, Colonel, R.E.,
Offg. Deputy Secretary.

Memorandum by the Consulting Engineer to the Government of India for State Railways, dated 8th August 1872.

I THINK it desirable that the standard dimensions should have some reference to the curves on which the structures may be built, or to the length of wheel base and vehicle employed.

It appears to me not impossible that some of the instances to which reference has been made in the circular, may be attributable to the tendency that has arisen of late to increase the length of vehicles and to sharpen the radii of curves.

In the standard diagram for fixed structures, which I prepared a few weeks ago, I specified an increase in the lateral dimensions for curves of sharp radius, and I think that some rule of the sort should be introduced into the standard dimensions for all railways. The projection (beyond the ordinary dimensions *on the straight*) varies on curves as the difference of versed sine of the wheel base, and that of the total length of the carriage (except in extreme cases where the versed sine of the wheel base is greater than half the versed sine of the total length); it follows then that either an allowance must be made in the fixed structures on sharp curves to provide for long carriages, or that a diminution shall be made in the lateral dimensions of long carriages. Bogie carriages seem as yet to be but little used on Indian railways, but it is only prudent in fixing standard dimensions to provide against the contingency of their being largely used. The following table which I have prepared will show approximately the allowance necessary with curves of different radii, and vehicles of different length and wheel base.

Table showing increase of Projection in inches caused by different lengths of vehicle on curves of various radii.

LENGTH OF		RADIUS OF CURVE.			
Carriage.	Wheel base.	1,500 feet.	1,000 feet.	600 feet.	300 feet.
Feet.	Feet.	Inches.	Inches.	Inches.	Inches.
15	8	·1	·24	·4	·8
20	11	·3	·42	·7	1·4
30	16	·6	·97	1·6	3·2
40	26	·9	1·4	2·3	4·6
60	40	2·0	3·0	5·0	10·0

The platforms of stations are frequently on curves of sharp radius.

The longest carriage I have taken in the foregoing table is the ordinary American bogie carriage, but I believe that some of Pulman's sleeping cars are considerably larger.

No. 369. ORDER THEREON, 26th September 1872, No. 2,280.

RAILWAY, No. 74.

COMMUNICATED to the Consulting Engineer for Railways for report.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following papers :—

No. 370. From Colonel G. W. WALKER, R. E., Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 15th February 1870, No. 184.

1 Comparative Statement.
Lieutenant-Colonel Farewell's letter No. 132 of 20th September 1869.
1 Extract of do., No. 182 of 4th December 1869.

I HAVE the honour to reply, for the information of Government, on the subject of their Orders No. 3,679 of 18th November and No. 136 of 11th January.

2. I am unable to reconcile the apparent surprise shown by the former order at any excess over estimate, with the fact that in Mr. Chisholm's letter No. 226 of 5th October 1868, submitting such estimate for sanction, it appears that he distinctly informed Government that its rates would probably be found insufficient; and with the following extract of paragraph 186 from the Administration Report of the Madras Presidency for the year 1868-69, namely, "The estimate for the portion of the building intended for males has, however, been found to be very insufficient, and a far larger outlay than was anticipated will be required to complete it."

3. I must also most respectfully repudiate responsibility for estimates which are sanctioned without the slightest previous reference to me, and of which copies have never passed through my office. Nor has my opinion ever been asked of the plans from which they are drawn up. I am fully prepared to accept all responsibility that can legitimately be fixed on me; but would, with all respect and humility, point out that Government cannot justly expect me to abdicate some of the functions of my office with respect to a particular work, and retain others. Paragraph 2 of G. O. No. 1,760 of 5th June 1866 (disposing of a letter wherein I made a final effort to maintain my position as Superintending Engineer with reference to these buildings) was never acted on, and Mr. Chisholm's communications were made direct to Government, or to the Neilgherry Executive Officers, to whom he repudiated the idea of my having any control over his papers. I continued to visit the buildings whenever in Ootacamund, with reference to occasional orders of Government and as the medium of communication between the executives and Government; but I interfered in no way with the progress of any building, but the hospital which was built on the original plan. It was indeed with the utmost surprise and dissatisfaction that I observed the hand to mouth way in which the Executive Officers consented to work on Mr. Chisholm's fragments of plans without estimate; feelings which I have often expressed to them on the spot. The state of affairs and my position with reference to them are shown in paragraphs 1 and 2 of a letter from Lieutenant-Colonel Farewell, printed with G. O. No. 868 of 17th March 1868, and my own letter printed with G. O. No. 1,647 of 23rd May 1868—see also paragraph 3 of G. O. No. 2,038 of 26th June 1868, G. O. No. 2,114 of 3rd July 1868, and paragraph 3 of G. O. No. 2,652 of 19th August 1868, all of which show the circumstances under which work was proceeding without complete plans or any estimate whatever. Such papers were finally supplied to Government and sent up for sanction of the Government of India in October 1868, and Lieute-

nant-Colonel Farewell received duplicate copies of them direct from Mr. Chisholm. But by the 31st of December of the same year the works had so far progressed that accommodation for 150 boys was available, as desired by G. O. No. 2,157 of 7th July 1868. I was not made acquainted with the contents of Mr. Chisholm's letter to Government, No. 226 of 5th October 1868, or with those of his letter to Lieutenant-Colonel Farewell, No. 229 of 12th October, and was not therefore officially aware, except from the Neilgherry Range Progress Reports of 1869, that the estimate was being exceeded, a source of knowledge equally available to Government from the extracts forwarded monthly from my office.

4. In conformity with my peculiar position relatively to the Lawrence Asylum works, the remarks with which I handed up Lieutenant-Colonel Farewell's letter and comparative statement of excess over estimate were very cursory in their nature; and I have been greatly astonished to find how much they appear to have displeased Government, for they were chiefly meant to exculpate both Mr. Chisholm and the Executive Officers who so cordially worked with him from blame, in consideration of the novelty and beauty of the work. I never meant to criticize Mr. Chisholm's "random" style of architecture, as I am in the habit of reserving my opinions till called for. I reckoned on Lieutenant-Colonel Farewell's explanations being taken as to the detailed items of excess, and am quite ready to own that they show a third cause in addition to the two adverted to by me, namely, the substitution of teakwood for stone flooring in some places at greater expense in order to complete the west wing for early occupation, and the use of iron sheeting instead of flat tiles also at increased cost and in conformity with my general statement of its necessity in letter printed with G. O. No. 2,552 of 21st August 1867; but I never meant any one to gather from what I said that the work was not fully worth its cost, and I trust that Government have not arrived at any such conclusion. I simply stated the fact that whatever be the cause Mr. Chisholm is sanguine in his estimates, whether for Taluq Cutcherries which were to have cost Rupees 14,000 to Rupees 16,000 (see G. O. No. 3,552 of 18th November 1867,) but actually average Rupees 25,000, or for the Coimbatore Church, of which his estimate of Rupees 11,300 has been revised to Rupees 13,500, exclusive of furniture (see my letter No. 129 of 10th October 1868), but no offence was intended to be given by such statement, and I regret that any has been taken.

5. I cannot better give the explanation called for in paragraphs 1 and 2 of G. O. No. 136 of 11th January, than by re-submitting Lieutenant-Colonel Farewell's comparative statement and letter No. 132 of 20th September, and extract of another letter No. 182 of 4th December. Captain Hankin, now at Madras, could verbally satisfy Government on any details regarding which they may wish for further information; but I am sanguine that, on a final review of all the circumstances, Government will be pleased to exculpate myself and the Executive Officers from blame with reference to the excess which has necessarily been incurred, and the irregularity in noticing which is only of a piece with that which has pervaded all proceedings connected with the work, which from first to last cannot be justified but must be confessed to the Supreme Government.

No. 371. From Lieutenant-Colonel W. FAREWELL, Acting Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Tellicherry, 28th November 1871, No. 190.

WITH reference to His Excellency the Governor-General's orders published with G. O., No. 7, dated 4th January 1871, and the despatch of the Right Honourable the Secretary of State for India communicated with G. O. No. 2,233 of 1st September 1871, I beg very respectfully to bring the following to the notice of Government with the hope that, for the reasons given, they will be so good as to urge the Government of India to re-consider the severe censure passed upon me and reported to the Right Honourable the Secretary of State for India. I beg first to draw the attention of Government to my letter, No. 182, dated 4th December 1869, to the Superintending Engineer of the 7th Division, and that Officer's letter No. 184 of 13th February 1870 to Government, both of which appear from recent correspondence with you calling for copies to have been mislaid, and were therefore probably lost sight of by Government when bringing the whole question before the Government of India. In my letters Nos. 132 and 182, I explained to the Superintending Engineer the cause of the necessity of submitting revised estimates and of my being utterly unable to do so before I did; of my having used iron sheeting under the pan tiles in lieu of flat tiles; as also the reason of substituting teak for stone flooring in the passages. I omitted, however, to note a very important fact, namely, that the duplicate and even then unsanctioned estimate for the building only reached me in October 1868, when fully two-thirds of the work had been built and one-third of it roofed in—*vide* paragraph 3 of the Superintending Engineer's letter, No. 184, dated 13th February 1870, and Neilgherry Range Progress Report for October 1868.* It can therefore hardly be said to be correct that I departed from and used more expensive materials than contemplated in an estimate I had never seen; though I did use the sheet iron instead of flat tiles as recommended by me and by the Superintending Engineer to Government in his letter printed with G. O. No. 2,552 of 21st August 1867, the necessity of which has been fully proved by Government having sanctioned at great expense its substitution for flat tiles found to be utterly useless in Government buildings at Ootacamund, namely, the Civil Dispensary and Hospital, Zillah and Debtors' Jail, Subsidiary Jail and Police Station, Pykarah bungalow, and the whole of the Commissioner's Offices; in doing so I did not depart from a sanctioned estimate, but with the experience gained in the construction of many buildings on the hills substituted a more suitable material than contemplated in some totally different estimates for the Lawrence Asylum framed by me some years previously, taking which as data the Government Architect, as I have before pointed out, framed his estimates. I feel sure had I not acted as I did I should, on the other hand, have been most justly blamed for so glaring an error as using flat tiles on one new Government building, while I actually at the same time had submitted estimates for removing them from others in the same station as condemned and useless, substituting iron sheeting instead. The immediate cause of my using teak instead of stone for flooring was that Government pressed the early completion of a portion of the building to allow of its immediate occupation by 150 boys with their Masters, etc., etc. Finding it quite out of my power to get sufficient stone ready,

* See Extract annexed.

I used teak knowing the difference of excess above what I anticipated the estimate would amount to would be far below 5 per cent., which excess is sanctionable by the Superintending Engineer on proper explanation, and I felt satisfied, under the circumstances, mine would be accepted. Had I waited for stone, I beg to bring to notice that up to the present date, though the building has been long in occupation, the stone work would not have been completed, the reduced stone flooring of the building having only just, after the greatest difficulty, been finished. In my letter No. 182, I did not sufficiently notice that the rates in the range had, after the submission of my former estimate for the Lawrence Asylum buildings as designed by me, greatly increased, especially those for wood-work. The wastage on timber of late years has been very considerably in advance of that of former years, owing to the very inferior quality of the timber only obtainable from the Forest Department, and the increase also of the cost of carriage and in labour and wages of carpenters especially. Lastly, I would beg very respectfully in regard to the high total of the estimates, remarked on by the Government of India and the Right Honourable the Secretary of State for India, to draw attention to the memorandum of the Inspector-General of Military buildings, Colonel Crommelin, printed with G. O. No. 1,924 of 27th June 1867, in which that Officer noticed that in Bengal (presumedly in the plains) the average rate at which soldiers could be lodged in Barracks was 2,000 Rupees a head; but he appears to have overlooked the fact of the Lawrence Asylum being 7,500 feet above the level of the sea, and that an Institution like the Lawrence Asylum requires, for the boys alone, fully one-third more accommodation than necessary in Barracks, and yet notwithstanding, including *every excess reported to date*, besides affording accommodation for the Principal and his family, Masters and Matrons, etc., the total cost of the building only amounts to 1,281 Rupees per boy, while the Barracks at Wellington within 8 miles of the site at a much lower elevation cost 1,800 Rupees per soldier housed.

2. Under the circumstances now reported, I trust Government will so explain the whole question to the Government of India that they will entirely exculpate me from the blame that has been attributed to me.

No. 372. From R. F. CHISHOLM, Esq., Consulting Architect to Government, to the Chief Engineer and Secretary to Government, dated Madras, 5th October 1871, No. 227.

I HAVE the honour to acknowledge the receipt of G. O., No. 2,233, dated 1st September 1871, conveying the very severe censure of His Grace the Secretary of State for India on account of the supposed fallaciousness of my estimate for the male branch of the Lawrence Asylum at Ootacamund. With the utmost respect I beg to submit the following explanations, in the hope that they will fully exonerate me from all blame.

2. When I forwarded the estimate of the Boys' branch to your predecessor, Colonel Charles Orr, R.E., I pointed out that the estimate was fallacious, as I knew the data to be in some cases incorrect—(see letter, No. 226, dated the 5th October 1868, Appendix A).

3. I further forwarded a copy of the above-mentioned estimate to Colonel Farewell, and suggested to him the advisability of revising the rates so that the estimate might truly represent the probable expenditure—(see letter, No. 229, dated the 12th October 1868, Appendix B).

4. Finding that these communications passed unnoticed, I submitted only detailed quantities for the Girls' branch of the Asylum, and in doing so I again called attention to the insufficiency of the rates—(see letter, No. 356, dated the 24th September 1869, Appendix C). The estimate was then sent to the Superintending Engineer, and the rates were revised.

5. I beg also to submit for perusal extracts from a letter which explains at length the various causes of excess, and respectfully to point out to Government the importance of the 4th paragraph of the same—(see Appendix D).

6. It has been represented that the excess cost is due to "architectural elaboration;" were this the case, I would beg to point out that the enhanced rates would be great on all items of work capable of such elaboration, and not on simple items, such as "flooring;" yet on this item there is an advance of 28 per cent., about 2 per cent. above the total percentage of excess; perhaps, however, a clearer refutation of this statement lies in the fact that Captain Morant's estimate for a simple brick-in-mud structure (Rupees 3,22,410) added to the Hospital (Rupees 80,000) for the Girls' branch amounts to Rupees 13,000 more than the corrected estimate for the Girls' branch (Rupees 3,89,000) on my plans.

7. In my letter, No. 162, dated the 23rd March 1867 (see Appendix E), I explained exactly both the nature and cost of what seemed to me legitimate ornament, and the photographs (Appendices F, G, H, I, and K) will show clearly that I have not exceeded this very slight accentuation.

APPENDIX A.

From the Consulting Architect to Government, to the Secretary to Government, Public Works Department, dated Madras, 5th October 1868, No. 226.

I HAVE the honour to submit the revised estimate and detail drawings of the male branch of the Lawrence Asylum, Ootacamund.

1 Roll Tracing.
Original Drawings
Do. do.
Detailed Drawings.
1 Estimate.

2. The rates in the estimate are the same as those entered in the original estimate submitted on the 11th of March 1867, which gives a total of Rupees 3,94,137-3-2. I don't think, however, that this estimate of cost is to be depended on, as I know the data to be in some cases incorrect. I have forwarded a duplicate set of plans and blank estimate to Major Farewell at Ootacamund, and I think it would be advisable to await and see what alterations he will make.

APPENDIX B.

From the Consulting Architect to Government, to the Executive Engineer, Ootacamund, dated Madras, 12th October 1868, No. 229.

I HAVE the honour to forward you a duplicate set of plans and estimate of the male branch of the Lawrence Asylum, the originals of which I have this day forwarded to Government.

2. I would suggest that the rates be revised, so that the estimate may represent truly the amount to be expended. The extra labour on face and exterior decorations will not cost more than I have allowed.

APPENDIX C.

Proceedings of the Madras Government in the Public Works Department, dated 3rd November 1869, No. 3,509.

From the Consulting Architect, to the Secretary to Government, Public Works Department, dated Madras, 24th September 1869, No. 356.

I HAVE the honour to forward the revised estimate and detailed drawings of the female branch of the Lawrence Asylum at Ootacamund.

2. In my No. 226 of the 5th October 1868, when forwarding similar documents connected with the male branch, I pointed out that the rates, although based on Major Farewell's estimated rates, were I thought insufficient for the work, as I knew the data to be in some cases incorrect. As the estimate was sanctioned without any revision by the local officers, I have thought it advisable, in the present instance, to submit a blank estimate of quantities only. If the Government desire it, I can return it filled in, but it would seem to me better if the Executive Engineer at Ootacamund would complete the abstract and enter extras not contemplated by me, such as continuous iron roofing under the tiles.

3. If you approve of this course, I shall feel greatly obliged if you will forward me a copy of the completed abstract.

MILITARY WORKS, No. 3.

RESOLVED that the estimate submitted with this letter for the female branch of the Lawrence Asylum at Ootacamund be forwarded to the Superintending Engineer of the 7th Division with a view to its being duly completed and returned to Government with as little delay as possible, as, under recent orders of the Government of India, no work can find a place in the Budget until the estimate for it has been sanctioned by competent authority.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R.E.,
Secretary to Government.

APPENDIX D.

Extracts from letter of Explanation.

2. The question which arises from this correspondence is one of vital importance, and I trust before any orders are passed by Government more detailed information may be called for; both Colonel Walker and Colonel Farewell represent that the excess of upwards of a lakh of Rupees is caused by the superior style of architecture introduced by me. I do not pretend to say that the work required by my designs is at a given quantity cheaper than ordinary work; possibly the masonry will be a little more expensive, but very slightly so; what I would respectfully contend for is that *the random style adopted in this building provides a given extent of accommodation at a cheaper rate than the symmetrical building designed by Major Farewell.*

* * * * * *

Fortunately, the question resolves itself into a very simple one, the relative cost of "labour" and "materials." With the exception of a few thousands of dog-tooth bricks, the whole of the materials were the materials ordinarily used in such structures; indeed, all the burnt material was made and deposited in "situ" before my designs were completed and approved of. If the total cost is separated into these two items "labour" and "materials," and the results compared with the estimate similarly divided according to the data forming the rates, the excess due to architectural elaboration will be rendered at once apparent, provided, of course, that such data can be shown by experience on other work to be accurate.

* * * * * *

3. Passing on to a closer examination of the statement, I find that a good deal of extra work not contemplated in the estimate is made no mention of by Major Farewell in his explanatory letter. Without pretending to great accuracy, the value of the extra work so executed I estimate at Rupees 25,000, as detailed below :—

	RS.
Night privies added by order of the Municipal Commissioners ...	4,900
Additional accommodation on third storey of Principal's house executed by my order in consultation with Captain Hankin	1,705
Spiral staircase at angle of tower found to be absolutely necessary ...	1,200
Pulling down and re-constructing screen wall which was incorrectly built	2,200
Continuous iron sheeting under tiles not provided for in estimate, about	15,000

I am unable to get the exact sum for this item, and I have arrived at it by calculation.)

The difference over this sum, amounting to Rupees 77,333, represents the true excess on rates.

4. The cause of so wide a difference between the estimated cost and the actual cost is, in my opinion, due in a great measure to the way in which items have been lumped together into *average rates*, and I trust I may not be thought over-zealous if I venture to point this out to Government. Flooring, for instance, is taken at per square of flooring complete in place of forming two items, namely, timber in scantling at per cubic foot, and boarding at per square. Roofing again is taken simply at per square completed in place of forming four items, as follows :—

1 Timber at per cubic foot.
2 Iron work at per lb.
3 Reepers at per square.
4 Tiling at per square.

Sir Digby Wyatt, in his despatch dated the 26th February 1869, pointed out the necessity of an executive officer possessing the most perfect knowledge of the cost of minute sub-divisions of labour and materials. In England, although a door is generally paid for by the superficial foot, the cost is arrived at by calculating the lengths of the various scantlings used, the labour of framing, and the cost of every moulding required by its size and shape.

* * * *

The windows designed by Major Farewell have moulded sashes ; in mine the sashes are splayed. His doors have moulded styles and rails mitred at angles and grooved raised and beaded panels, front and back, tongued into frames ; my doors have plain styles and rails splayed and plain screwed panel splayed at edges, altogether a *cheaper* and *less* elaborate form of door.

With regard to the cost of roofing and flooring, I have no means of separating the various items, but the comparative statement shows a discrepancy somewhere. Flooring estimated at 102 costs 130, and roofing estimated at 106 costs 136-8-0. This latter rate, however, includes 15,000, the assumed cost of the continuous iron sheeting ; deducting this sum therefore the cost of the roofing comes *within* the estimate. Now, as the flooring consists wholly of teakwood of ordinary plain description, it is evident that the cost of the wood itself has been miscalculated, and, on the other hand, as the item wood-work forms a very large proportion to the cost of the whole in roofing, it is out of the question to suppose that there would be no equivalent excess on roofing.

5. If, as Colonel Walker states, the excess is due to architectural elaboration, then the cost of all plain work would be well within the estimate, selecting, for example, the item of flooring which consists simply of beams, joists, and boarding. The excess rate is as follows :—

Estimated	102	Advanced rate. 28 per cent.
Executed	130	

Comparing this with the excess on the whole estimate we have the percentage—

Estimated	3,94,000	Advanced rate. 26 per cent. nearly.
Executed	4,96,000	

That is to say the percentage of excess on the plainest description of work is greater than the percentage of excess on the whole work. The instance Colonel Walker mentions in support of his views on architectural elaboration, namely, the excess cost of the Ootacamund Library, the Coimbatore Church, and Taluq Cutcherries in the 7th District rather tend to confirm the opinion I have expressed regarding the inaccuracy of the rates of this range, as all the works were estimated for at rates supplied me by local officers. The excess on the Church at Ootacamund is quite as large in proportion, if not larger, than the excess on the works he mentions, and this is a building with which I had nothing to do.

6. The excess on the Ootacamund Library carried out by amateur builders who laboured under all kinds of disadvantages was as follows :—

Estimated	25,000	About 25 per cent.
Executed	30,000	

In conclusion, I would beg leave to state that the items said to be omitted from my estimate are no more omitted from my estimate than they were from Colonel Farewell's estimate. I included all items which I found in the latter, and the cost of such items, as water-pipes, lightning conductors, I imagined to be provided for under the head of Contingencies.

* * * * *

(True Extracts.)

(Signed) R. F. CHISHOLM.

APPENDIX E.

Proceedings of the Madras Government in the Public Works Department, dated 27th June 1867, No. 1,924.

From R. F. CHISHOLM, Esq., C. E., Executive Engineer, Presidency, to the Secretary to Government, Public Works Department, dated Madras, 23rd March 1867, No. 162.

I HAVE the honour to acknowledge the receipt of your memorandum No. 64 of yesterday's date, inquiring what the probable cost of the Boys' branch of the Lawrence Asylum buildings would be, if all decorative or architectural accessories were dispensed with.

2. On referring to the detailed estimate I find that the estimated cost of purely architectural and decorative accessories amounts to 15,784 Rupees, or less than 4 per cent. on the estimated outlay.

3. I trust it may not be considered out of place if I venture to offer a few remarks on the subject of the decorations of this building. I do so with greater confidence, as I am in a position to point out how deductions can be made in the cost of the Boys' branch of the Asylum, without materially affecting either the general appearance or the extent of accommodation.

4. In the first place it is most difficult, in structures of this kind, to define what legitimately comes under the head of ornament. Suppose, for instance, an arch is turned in three concentric rings. If shorn of all pretensions to ornament, it would appear as in sketch I., see the margin; if we make the edge of the first brick bead moulded, project every second brick in the second ring, and give a splay moulded and projected brick for the third ring, the result will be ornament of the very highest architectural merit (see figure 2). The splay moulded bricks cost no more than common bricks, and with regard to the labour, I never yet met a workman who would not prefer to build No. 2 in preference to No. 1; still I admit that the cost would be a little greater. I cannot exactly explain why, except perhaps that the workmen take a real interest in their work and turn out a better article at a very slight increased cost. Now, with the exception of the glazed tiles, all the ornament in the proposed building both internal and external is formed as in figure 2, and I scarcely think the most parsimonious would, on comparing the two, wish it to be omitted.

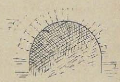


Fig 1

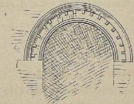


Fig: 2.

5. The tower above the Principal's studio also forms a portion of the 15,780 stated above. In this particular style a feature of this kind becomes almost a necessity, without it the buildings would appear a scattered mass having little or no relation to each other. A crowning member

to such a composition bears the same relation to the whole, as a capital does to its column, and if no tower is to be erected, I would strongly recommend that a symmetrical plan be reverted to, at the same time pointing out that the cost of "filling out" a symmetrical plan will more than quadruple the cost of this feature. I have not the means of ascertaining the amount of Major Farewell's original estimate for a symmetrical plan, but *the revised and reduced* estimate including the Masters' houses and

Principal's quarters amounted to	Rupees	4,31,000
My own estimate amounts to	,,	4,04,000
Difference ...	Rupees	27,000

and this result was only arrived at, in the symmetrical plan, by adopting an objectionable arrangement and an extremely ugly facade. Stated simply, a symmetrical building without ornament of any kind will cost about as much as a random building with a few decent pretensions to style and unity, from which it may be argued that the cheapest of all buildings is a random plan without any pretensions at all; this is perfectly true, but the result would be similar to the prospect offered by the *backs* of London houses.

6. The glazed tiles are of course purely ornamental, they take the place of polished marble in the original specimens of the style. They do not cost much, and apart from ornamenting the structure, I trust the amount expended in the manufacture may be the means of introducing the art of *encaustic* tile-making into Madras. The sum I have allowed for this work is large, and I have no doubt a considerable saving may be effected; as I am responsible for this item of the estimate, I have taken the precaution to allow a wide margin.

7. I now beg leave to point out how reductions can be made in the amount of the estimate without altering or curtailing the ornate portions.

	RS.
1st.—I would reduce the corridors throughout the building from 8 feet to 6 feet broad, this would effect a saving of	3,500
2nd.—A portion of the Hospital might be devoted to the residences of four Masters, which would effect a saving of ...	19,300
3rd.—I would make the roof of corrugated iron throughout, which would reduce the estimate further by	7,250
4th.—I would adopt a permanent floor in place of a boarded floor, by which a further saving could be effected of	11,100
Say in all ...	41,150

8. I make the fourth suggestion with some hesitation, as Major Farewell considers terrace floors damp and uncomfortable in that particular climate, still, as the amount is large, I think the matter worthy of further consideration.

9. I believe further reductions, amounting to about 20,000 Rupees, could be effected, but it would be necessary, before entering into the particulars of these deductions, that I should meet with and consult the Sanitary Commissioner.

Appendix B.

1. I beg leave to add a few remarks after perusing the Government of India Order.

2. The removal of the Girls' branch of the Lawrence Asylum from Lovedale leaves the site available for the Boys' branch. There is ample room on this site to spread the building out into a single line of dormitories with corridors running along the back. The cost would be probably increased, and the plans would have to be entirely re-modelled, but to prevent delay the working drawings might be commenced and the work proceeded with after a sketch elevation had been submitted for approval.

(Signed) R. F. CHISHOLM.

4th June 1867.

Memorandum by Mr. Chisholm on the Lawrence Asylum Plans, Ootacamund.

1. I have perused very carefully Colonel Crommelin's memorandum on the plans for the proposed Lawrence Asylum.

2. The general sanitary principles and arrangements which Colonel Crommelin has touched on are so admirable, and have been so clearly and unmistakably laid down in the reports of the various Sanitary Commissions appointed by Government, that there can be no doubt as to the "pavilion" system being the only arrangement in building which obtains a maximum of light and air, and that the detailed rules to be generally adopted are those laid down in the Commissioner's blue books. As I have held these opinions since first perusing the Commissioner's report, I was only too eager to adopt the pavilion system when the preparation of the designs was entrusted to me, so far as the limited area of the building space would permit. I forward the ground plans of the Boys' Asylum, in order that it may be seen how closely I adhered to these principles. Since these plans were drawn out, I have had an opportunity of seeing the site and conversing with professional residents, and I am of opinion that were such plans carried into execution half the children would die of cold, or the building would be so closed by the inmates as to make it injurious from a collection of foul air.*

Aspect.

3. Unfortunately the northern aspect presents the principal elevation, but even were this not the case, the building area is too limited to admit of leaving the northern face open. It will be observed, on reference to the plans, that I have put as few dormitories on this face as possible, and that the chief part of the northern wing of the structure is on open arches, and, if necessary, the whole of the under part can be left open. It will be observed also that *I have turned the axis of the building* 11° *east*, and broken it up into as many angles as possible, with the view of obtaining a fair distribution of sunshine.

Back-to-back arrangement of Dormitories.

4. I adopted this arrangement after the most careful consideration of the question, and, after I had made numerous sketches of other arrangements; the back-to-back arrangement although objectionable in principle is, in my opinion, under the peculiar circumstances of the case, the arrangement which embodies the minimum number of faults.

Floor space in Dormitories and School-rooms.

5. I have adopted the scale of accommodation allowed in England in Institutions of the kind. In the Royal Masonic Institute, one of the latest examples (erected 1865), each boy is allowed 40 superficial and 500 cubic feet in the dormitories. I have allowed 50 superficial feet, and a minimum cubical area of 600 feet. The school-room space might be slightly increased with advantage, but I would strongly recommend that the method of dividing the school space into one large room, and three or four small class-rooms be retained. I know of no English example (and I have plans of six different designs erected within the last ten years) where any other arrangement has been tried, and it would seem to me that on such a question we can have no better guide than that of experience.

Heibgt of Dormitories.

6. The figures on the plans sent to Calcutta must be incorrect. The lower dormitories are 13 feet from floor to floor and the upper average 15 feet in height, and are so figured on the copies in my office.

Verandahs.

7. I very respectfully beg to differ from Colonel Crommelin on this point. I am of opinion that verandahs would add materially to the discomfort of the inmates. A verandah, if sufficiently open, could be no protection against stormy weather, and would completely rob the walls of sunshine. The object in a cold and damp climate is to obtain warmth and dryness. The

* In Wellington a much warmer and more sheltered spot, the Soldiers, I have heard, cannot be prevented from stopping up the air shafts with their clothes.

experience obtained at Wellington, where verandahs are provided, should be sufficiently conclusive on this point.

8. In conclusion, I beg to state that architectural considerations have in no way caused me to deviate from the principles laid down by sanitary authorities, and that I make the above remarks with no desire to retain the external elevations.

9. I append a letter on the cost of the ornament which seems to have been considered a little lavish.

(Signed) R. F. CHISHOLM,
Architect.

From the Secretary to the Government of India, Public Works Department, (Military Works,) to the Secretary to the Government of Madras in the Public Works Department, dated Simla, 29th May 1867, No. 523-M.

No. 455, dated 16th February 1867.
" 787, " 15th March "

	RS.
Male Asylum	4,03,979
Female do.	2,74,377
Church	95,005
Hospital	79,700
Works already executed	1,30,173
Total...	9,83,234

I AM directed to acknowledge the receipt of your letters marginally noted, submitting for sanction designs with estimates aggregating Rupees 9,83,234 in amount, for the proposed Lawrence Asylum buildings at Ootacamund, as specified on the margin and in reply to communicate the following observations and orders thereon.

2. While fully recognizing the merits of the designs submitted, His Excellency the Governor General in Council observes that the expenditure to be incurred in carrying them into effect exceeds the amount which His Excellency would consider himself justified in allowing for the object in view.

3. In consideration, however, of the expense that has been already incurred on the work, and of the fact of the working establishment having been formed on the site, His Excellency in Council is pleased to sanction the design and estimate, amounting to Rupees 4,03,979, for the Male Asylum, as also the expenditure on works already executed, namely, Rupees 1,30,173, (making a total of Rupees 5,34,152,) leaving it to the Government of Madras to judge, first, whether some saving might not be effected by dispensing with a portion of the ornamentation, and adopting a more economical design for the stables and offices *of the Male Asylum*; and, secondly, whether the proposed buildings for the Female Asylum and Church should not be altogether dispensed with, the girls being provided for, by moderate though efficient additions, to the building which forms the *present* Male Asylum, and the Church by the appropriation of a room in each Asylum, in which the children might be conveniently assembled for prayers.

4. Annexed is a copy of a report by Colonel Crommelin, the Inspector-General of Military Works, upon the Asylum buildings as designed in a sanitary point of view, the suggestions in which His Excellency in Council desires may be taken into careful consideration and disposed of by the Government of Madras in communication with its sanitary officers. There is one point touched upon therein which His Excellency has desired me to bring to prominent notice, namely, the evils of mixed ventilation. His Excellency in Council considers that a series of dormitories ventilating into a common passage is a most objectionable arrangement in any climate, as tending to facilitate the spread of disease. This defect could easily be remedied in the present case without any outward change of the building, and I am to request that some means may be adopted accordingly of isolating the exit of foul air from each dormitory.

5. As regards the Hospital, I am to state that orders on the estimate will be held over, pending the receipt of the proposed plan for the building.

6. The sanction now accorded has been registered in this office as No. 21 M. of 1867-68. The designs and estimates are returned.

Note by Lieutenant-Colonel W. A. Crommelin, R. E., C. B., Inspector-General of Military Works, dated 7th March 1867.

LAWRENCE ASYLUM, OOTACAMUND.

1. THE design for the above Institution is so admirable in its architectural features and in many of the details of general arrangement, and has had so much labour bestowed upon it, that it is quite an invidious task to be obliged to pass any disparaging criticisms upon it.

2. This design, however, has certain sanitary defects, which cannot well be passed over, and which may be briefly stated as follows :—

1st.—The component buildings of both Male and Female Asylum are so arranged that they almost entirely shut in the enclosed areas ; ventilation of the blocks would thus be much obstructed, but the difficulty could, in a great degree, be overcome by freely opening out the corners.

2nd.—The dormitories have north and south as well as east and west aspects. It is presumed that at Ootacamund, as well as at other stations, generally, there is one aspect more suitable than any other with reference to prevailing winds. It is generally considered that at hill stations a north aspect is to a certain extent objectionable, as being bleak and devoid of sunlight.

3rd.—The arrangement of back-to-back dormitories, having windows or doors on only one of the long sides, and with an intervening corridor, is generally considered by Sanitary authorities as being very objectionable. Whatever be the direction of the wind, one line of wards will generally interfere with the ventilation of the other ; foul air is, moreover, apt to collect in the corridors and become diffused throughout the wards, and the wards and corridors will ventilate into each other, which is considered unsatisfactory.

4th.—The positions of the wash-houses and night privies opposite one of the long sides of the dormitories are unsatisfactory, as affluvia is liable to pass from these out-offices into the wards. The out-offices should be at the end of the wards, but the general block arrangement that has been adopted prevents their being so placed.

5th.—The floor space per child allowed in the dormitories, namely, 54 superficial feet, seems hardly sufficient. The wards being 20 feet wide, and allowing 2¾ feet for the width of a bed, the distance between beds would be only 2¾ feet. Perhaps 6 running feet per child would be sufficient, this would give 60 superficial feet per child. For soldiers in the hills 77 superficial feet per man are allowed.

6th.—The space per child in the school-rooms, 9·7 superficial feet also appears too little. For Barrack School-rooms we allow 15 superficial feet per pupil. Twelve superficial feet per pupil should, perhaps, be considered a minimum allowance.

7th.—One large general school-room, in addition to a few small class rooms, seems hardly sufficient for so many children, especially when the breadth* of the room (36) is so great in comparison with the length (72 feet). It would be exceedingly difficult to keep such an area, when filled with some 300 children, properly ventilated. It would be preferable to provide two or three large school-rooms, the breadth of which should not exceed 24 feet.

* In the case of the Boys' School-room.

8th.—The same remark applies, although in somewhat less degree, to the dining hall.

9th.—In the section on drawing 7-9 feet are given as the height of dormitories on the ground and upper floors, I would not give any dormitory a less height than 14 feet, particularly when the allowance of floor space is limited.

10th.—The total absence of verandahs seems to me to be a mistake. It has been decided that verandahs are absolutely necessary in hill stations for Barracks, as protection against wind and storms. Without such protection the dormitories will be at times cold, damp, and uncomfortable.

11th.—As a general remark it may be observed that, in a sanitary point of view, the only block arrangement of buildings for the accommodation of considerable bodies of people, whether

they be soldiers, hospital patients, school children, etc., etc., that is likely to prove satisfactory, is that generally known as the pavilion system.

3. It may not be out of place for me to mention here that the estimate, roughly taken at 10 lakhs, for accommodation comprising Schools, Church, Masters' houses, Day-rooms, etc., etc., for 800 children, appears to me to be moderate, and I do not think that it need be expected that full accommodation of the nature provided in the designs can be built for less than 1,200 or 1,500 Rupees a pupil.

4. Our detailed estimate for complete accommodation of every kind for a Regiment of Infantry is 15 lakhs, this gives a rate of nearly 2,000 Rupees per man.

(Signed) W. A. CROMMELIN, Lieut.-Colonel, R.E.,
Inspector-General of Military Works.

REFERRED, with Mr. Chisholm's letter of the 23rd March last, to the Sanitary Commissioner for such observations as he may have to offer.

(Signed) CHARLES A. ORR, Colonel, R.E.,
Secretary to Government.

19th June 1867.

From the Sanitary Commissioner, Madras, to the Secretary to Government, Public Works Department, dated Madras, 25th June 1867, No. 198.

21 Plans.
1 Letter from the Secretary to the Government of India, to the Secretary to Government, Public Works Department, Madras, dated 29th May 1867, No. 523 M.
1 Memorandum of Lieutenant-Colonel Crommelin, with enclosures, dated 7th March 1867.
1 Memorandum of Mr. Chisholm.
2 Estimates.

I HAVE the honour to acknowledge your docket dated 19th June 1867, upon a letter from the Secretary to the Government of India upon the subject of the Lawrence Asylum, and Mr. Chisholm's letter explaining certain details in the design and construction of the Asylum buildings.

2. Of the objections raised by Colonel Crommelin on sanitary grounds, that which has attracted prominent attention is the back-to-back arrangement of the dormitories with a corridor between each dormitory.

3. There can be no doubt that, under ordinary circumstances, this is not a desirable arrangement, and that, had abundant space been available for both Male and Female Asylums on the site selected, it would have been better to have avoided the placing a corridor between the dormitories.

4. At the same time, bearing in mind the moderate length of these corridors, the fact that they have ample means of ventilation at either end, that the dormitories themselves will be exceedingly well proportioned, well ventilated rooms, I can see no reason why, in such a climate as that of Ootacamund, there should be any accumulation of foul air, or any danger to the health of the occupants of the dormitories.

5. As regards the position of the lavatories and night privies, to which objection has been raised, the general block arrangement prevents their being placed at the end of the wards.

6. To the lavatories, I conclude, no serious objection can be made. The privies are to be Jenning's patent water-closets, and will be separated from the dormitories by a well ventilated gallery. If there are double self-closing doors to this gallery, I do not think that any evil will arise.

7. I entirely concur with Mr. Chisholm in thinking verandahs ill-suited for buildings on the Neilgherry Hills.

8. I think that Colonel Crommelin's remarks, paragraphs 5 and 6, as regards increased floor space, are just, and it will be an advantage to give additional surface space both in the dormitories and school-rooms.

9. With the alterations indicated above, I believe that the very handsome building designed by Mr. Chisholm will prove to be unobjectionable on sanitary grounds.

MILITARY WORKS, No. 42.

THESE papers will be communicated to Mr. Chisholm, with a view to his remodelling his designs for the male branch of the Lawrence Asylum at Ootacamund to meet, as far as possible, the views of the Government of India and the Sanitary Commissioner, improving where necessary the ventilation and giving such increased floor space as the area of the site and the arrangements of his plan will admit. It occurs to Government that, perhaps, this may now be readily effected by appropriating for the accommodation of some of the Masters a portion of the Hospital, which is larger than is required under the present altered circumstances.

2. Mr. Chisholm will be at liberty to proceed to Ootacamund, if necessary, and will take the opportunity of preparing a design for adapting the buildings of "Stonehouse," now occupied by the boys of the Asylum, for the accommodation of 400 girls.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R.E.,
Secretary to Government.

No. 373. ORDER THEREON, 26th September 1872, No. 2,281.

MILITARY WORKS, No. 13.

ORDERED that the following letter be sent.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 374. From the Secretary to the Government of Fort St. George, Public Works Department, to the Secretary to the Government of India, P.W.D., dated 26th September 1872, No. 2,282.

MILITARY WORKS, No. 14.

SIR,—Adverting to your letter of the 12th November 1870, No. 1,205 B.M., and to the despatch from the Secretary of State under date the 24th May 1871, No. 36, referring to the expenditure on the Lawrence Asylum buildings at Ootacamund, I am directed to submit, for the consideration of His Excellency the Viceroy and Governor-General in Council, and for eventual transmission to the Secretary of State, the accompanying copies of letters from Colonel Walker, R. E., the Superintending Engineer, from Mr. R. F. Chisholm, the Consulting Architect, and from Lieutenant-Colonel Farewell, the Executive Engineer, whose proceedings in connection with the buildings in

question have elicited the censure of the Government of India and of the Home Government, requesting that, for the reasons stated, the censure passed upon them may be withdrawn.

2. I am also directed to bring under the consideration of the Government of India and of the Secretary of State the position which Colonel Walker, who was included in the strictures passed upon the officers of the Public Works Department, held in connection with the buildings in question.

3. It appears on reference to the correspondence that the site on which the buildings have been erected was fixed on in the official year 1863-64, and in that year instructions were issued to the Superintending Engineer, Colonel Walker, to prepare plans and estimates. Previous to the completion of the plans which were submitted to Government in September 1864, the Governor in Council, with the view of relieving some of the Jails in the plains, which at that time were greatly overcrowded, directed that 500 convicts should be sent up to the Neilgherry Hills for the purpose of being employed on the Lawrence Asylum Works. Some expense was necessarily incurred in hutting the convicts and their guards; and in order that their labour might be utilized they were at once employed in levelling the sites for the projected buildings and in the manufacture of bricks. It was also deemed advisable at once to erect permanent workshops for use, not only while the buildings were under construction, but subsequently for the instruction of the boys in carpentry and other trades.

4. When the plans of the main buildings were laid before Government, Sir William Denison, who was then at the head of the Government, considered them to be defective in certain respects, and suggested various alterations which were approved of by his colleagues. Orders were accordingly issued for the preparation of revised plans which were received by Government in December 1865. In the meantime Mr. Chisholm had been appointed Civil Architect, and it was decided to transfer the plans to him with a view to the improvement of their general effect. Mr. Chisholm urged various objections to the arrangement of the building as set out in the revised plans. Before the plans were settled Lord Napier succeeded to the Government, and at his instance Mr. Chisholm was asked to prepare a completely new design for the main buildings; but it was determined, in order to furnish employment to the convicts and to the work-people who had been collected in anticipation of the early commencement of the buildings, that the construction of the Hospital should be at once proceeded with on the plan originally prepared by the Superintending Engineer.

5. From this time the responsibility of the Superintending Engineer, so far as related to the preparation of the plans and estimates, was at an end. The revised plans and estimates were submitted direct to Government by Mr. Chisholm in February 1867, the estimates being framed with reference to the rates previously adopted by the Executive Engineer Major (now Lieutenant-Colonel) Farewell. It is to be regretted that Mr. Chisholm was not instructed to submit his plans and estimates through the Superintending Engineer in order that the sufficiency of the estimates might be duly scrutinized, but for this omission the Superintending Engineer, Colonel Walker, cannot be held responsible, and, in the opinion of the

Governor in Council, he should be relieved from the censure which has been passed upon him.

6. His Excellency in Council is also of opinion that Mr. Chisholm is free from blame. It was not unreasonable that when first preparing his plans and estimates he should rely on the rates adopted by the Executive Engineer. It will be seen from his letter of the 26th October last, that Mr. Chisholm, when submitting a revised estimate for the Boys' Asylum in 1868, drew attention to the necessity of correcting the data, and subsequently when submitting the plan of the Girls' Asylum sent in a blank estimate with the quantities only, leaving the rates to be filled in by the local officers.

7. Lieutenant-Colonel Farewell, who was the Executive Engineer during the greater part of the time that the building was in progress, points out in his own vindication that, owing to the expressed desire of the Government that the building should be pressed forward as rapidly as possible, a great deal of the work was actually done before the sanctioned estimates reached him, and that this was the reason for his substituting teak for stone in the flooring. In regard to the substitution in the roof of iron sheeting under the pan tiles for flat tiles, he observes that the former description of roofing had been found necessary and had been adopted for several public buildings on the Hills.

8. Under all the circumstances of the case, the Governor in Council considers that Lieutenant-Colonel Farewell also should be exonerated from the censure which has been passed upon him, and that the errors which have occurred must be ascribed to departures from the established course of procedure which were permitted by the Government, and for which the responsibility must rest with the Government.

No. 375. Read the following letter from the Officiating Joint-Secretary to the Government of Bengal in the Public Works Department, Irrigation Branch, to the Secretary to the Government of Madras, dated Fort William, 9th September 1872, No. 758-I. :—

With reference to paragraph 22 of the accompanying report by the Superintending Engineer, Orissa Circle, upon the great floods of July last, I am directed by His Honour the Lieutenant-Governor of Bengal to request that the Government of Madras will be good enough to convey to the Officer Commanding the 41st Regiment Madras Native Infantry the Lieutenant-Governor's high appreciation of the exertions of the officers and men of that Regiment in affording assistance to the Engineering Department at a time when the safety of the town of Cuttack was seriously endangered.

2. I am also to forward extract of paragraph 2 of a letter from the Government of India* on the same subject, and to request that it may be communicated to the Regiment in question.

* No. 695-I., dated 16th ultimo.

No. 376. ORDER THEREON, 26th September 1872, No. 2,283.

ESTABLISHMENT, No. 26.

COMMUNICATED to the Military Department in order that the thanks of His Excellency the Governor-General in Council and of His Honour the Lieutenant-Governor of Bengal may be conveyed to Colonel Luard and the Officers, Non-Commissioned Officers and men of the 41st Madras Native Infantry.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 377. Read the following letter from the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Courtallum, 11th September 1872, No. 2,646 :—

UNDER Chapter XXIV., paragraph 1, Rule III. of the Public Works Code, I have the honour to submit, for the sanction of Government, an estimate, amounting to Rupees 120, for repairing and improving the soldiers' shed at Tiroomungalum in the Madura District, for the accommodation of the Overseer in that taluq, as the cost of the work exceeds one-fourth of the valuation of the existing building.

1 Estimate of Rupees 120.
1 Specification Report.

2. The sum required towards the repairs in question can be met from the current year's grant under "Repairs, Civil Buildiugs, Provincial." The work has been commenced, in anticipation of sanction, on emergency, in order to complete the same before the monsoon sets in, and I trust, therefore, that this course will meet with the approval of Government.

3. I may mention that the transfer to the Public Works Department of the above-mentioned soldiers' shed has been sanctioned in G. O., No. 183, dated 23rd January 1872, and I should add that the building was in a very dilapidated state when transferred to this department.

No. 378. ORDER THEREON, 26th September 1872, No. 2,284.

CIVIL WORKS, No. 20.

SANCTIONED.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 379. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1872, No. 463 :—

I HAVE the honour to report, for the information of Government, that I have lately inspected the North-West Line of the Madras Railway. Owing to press of work at Madras, and the very weak state to which my office had been reduced, my inspection was more hurried than I could have wished.

2. The greater part of the line I found in excellent order. Ballast seemed to be required in some places between Royalcherroo and Goondacul, but I understand that this want is now being supplied. From Goondacul northwards to Raichore and westwards to Bellary, the embankments, which are chiefly formed of black cotton soil, have not yet become thoroughly consolidated, and will require constant attention for some time to come. This is especially the case on the 16 miles to the north of the Toongabudra; but the line throughout was in fair order at the time of my visit.

3. The fencing seemed to be efficient all over the line. The aloe fence has not thriven equally everywhere. In some places it has suffered from drought, or some other cause, and seems never to have been able to make head; but in all such places it is supplemented with a wire fence. I cannot speak to the state of the fencing between Goondacul and Auspree, as I travelled by the ordinary trains, and this part of the line is passed over after dark; but I have no reason to suppose that it is inferior to the fencing on the rest of the line.

4. The bridges seemed to be for the most part in very good order. Upon the bridge over the Cheyaur, I lately sent a special report.* The additional opening to the bridge at the 287th mile, which was sanctioned† in February last, has not yet been begun, as it was thought unadvisable to commence work until after the monsoon; but the curtain walls and flooring of the one opening have been built. Similar protective works have now been provided for almost every bridge on the line. The Huggry river crossing remains in the state in which it has been since the opening of the line, eighteen months ago. The temporary road across the river bed was available at the time of my inspection; and up to that date, owing to the dryness of the season, it had been interrupted only once during this year. It is hoped that the cylinders for this bridge will arrive soon from England; but I can see no reason to expect that the bridge will be opened for traffic before the end of next year.

* No. 412, dated 2nd August 1872.

† *Vide* G. O, 26th February 1872, No. 519.

5. The station-houses and buildings were in good order. At Bellary the only work in progress is the erection of a weigh-bridge. At Raichore the lines for Porters and Pointsmen were in progress, and the construction of new staff quarters had been begun, it having been arranged to make over to the Great Indian Peninsula Railway Company the quarters which were originally built. The other buildings at this station are nearly finished; the roof of the engine-shed was in progress at the time of my visit. The condition of the central platform remains the same as at the time of Major Prendergast's inspection* in November

* *Vide* G. O., 8th December 1870, No. 2,977.

1870. An estimate for removing it and widening the other platform was forwarded in April last, but was returned by the Government of India with their letter* of the 1st June, No. 731-G.R. I am still in communication with the Agent on the subject, and I hope soon to be able to lay the estimate before Government.

* *Vide* G. O, 26th June 1872, No. 1,543.

6. At Kosgee I observed that the turn-table, which was temporarily placed there in 1870 when the line was opened to the Toongabudra river, is still in position, and I was informed that another turn-table is also lying at the same station. I learn from the Agent that these two turn-tables are looked on as surplus stock, and that, in his opinion, they are not more than necessary for the Madras Railway system; but it seems to me that one might have been economically utilized on the Neilgherry branch.

7. In the matter of the dress of the station staff along the line, there is still room for improvement. This has been more than once brought to notice, but on my late inspection, I found it sometimes very difficult to identify the Station Masters; the ticket-collectors were seldom in their blue waistcoats, and on several occasions the guards and porters were not properly dressed.

8. In the refreshment-rooms a very great improvement has been effected since the Traffic Department took charge of them from the 1st May last.

9. From Raichore I went on the Kistna to see what progress had been made in the bridge over that river, and what prospect there was of its being soon opened for traffic. The bridge is to consist of thirty-isx girder openings, each opening being 107 feet from centre to centre, and the girders resting on iron cylinders. At the time of my visit twelve girders were in position on the north bank of the river, and three on the south bank. The foundations of some more cylinders had been got in, but from what I saw, and was able to learn, I do not think there is much chance of the bridge being finished during 1873.

No. 380. ORDER THEREON, 26th September 1872, No. 2,285.

RAILWAY, No. 75.

His Excellency the Governor in Council is glad to learn from this report of the generally satisfactory condition of the works on the North-West Line of the Madras Railway; but regrets to find that the arrangements to secure the easy recognition of Railway officials by passengers and others are still so imperfect. His Excellency trusts that this subject will receive early attention at the hands of the Agent; it is a matter to which the Government attach considerable importance.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 381. Read the following letter from the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Courtallum, 22nd August 1872, No. 2,380 :—

I HAVE the honour to acknowledge the receipt of G. O., 5th August 1872, No. 1,839, and to express my unfeigned regret at the amount of censure with which my name is coupled therein.

2. It is necessary to premise by saying that the works devised in connection with the restoration of Tiroomala Naick's Palace at Madura originated with His Excellency Lord Napier of Merchistoun, and they were carried out by His Lordship's express desire by the Government Architect, independent of the Superintending Engineer of this division.

3. This course had been pursued for some time anterior to my taking charge of the division, and it was not becoming on my part, as I conceived, for me to cavil at the arrangement. As, however, considerable irregularities occurred in the submission of the accounts, I made a representation* to the Government on the subject, and they were pleased in reply to order, that so far as "the accounts" were concerned (I quote from memory) these were to be submitted monthly direct by the Overseer in charge of the works to the Range Officer.

* Letter No. 38-A, dated 3rd April 1871, printed with G. O., No. 1,151, dated 24th August 1871.

G. O., No. 1,021, dated 13th April 1871.

4. Nothing was said at that time, or has subsequently been communicated to me, to the effect that these works were under my control, and I have studiously avoided, therefore, giving any instructions in the matter except in such minor details, which, on account of Mr. Chisholm's expressed desire and my wish to assist him as much as possible, as also the great personal interest I feel in the undertaking, I considered to require immediate attention.

5. I may now add that it was not until the receipt of the G. O. under reply, that I have been informed that Lord Napier's "express instructions" were that the repairs of the Hall, HH of the lithographed plan, were to be "the first taken in hand." Be this as it may, I cannot myself see how I have disregarded "Mr. Chisholm's own opinion" in submitting, as I did, an estimate prepared in accordance with that gentleman's directions, and forwarded by me at his particular request, *vide* my letter printed with G. O., 15th June 1872, No. 1,487.

6. I am next censured for including the Overseer's salary in Mr. Chisholm's estimate of Rupees 7,250, "contrary to standing order of the department and other positive Government orders." The arrangement of including this Overseer's salary in the estimate has been in force ever since the commencement of the work; the arrangement was made in Madras, and I had nothing whatever to do with it. During Mr. Chisholm's absence on private leave, during which period he requested me to have an eye on the work, I submitted an application from Overseer G. Soobroyaloo Naidoo, soliciting that he might be brought on the permanent strength of the department. And in G. O., 26th June 1872, No. 1,701, it was ordered that he should be brought on the strength of the establishment "on the occurrence of a vacancy either in the Madura or Tinnevelly District."

7. I then explained, see my letter printed with G. O., 9th August 1871, No. 2,050, that as G. Soobroyaloo Naidoo was specially qualified for the Palace work, it was not advisable that he should be removed therefrom, and I suggested that he should be declared as having been appointed Taluq Overseer, on the *seconded* list, from the 13th August 1870, the date on which Mr. Chisholm nominated him to the work.

8. This suggestion was not acceded to, and as Soobroyaloo Naidoo is drawing Rupees 100 per mensem in addition to horse allowance at Rupees 15 (the rate of pay promised him, as he assured me, before he left Madras,) he informed me that he was not desirous of relinquishing his present position for the duties of an Overseer on Rupees 60 per mensem. As I have already stated, his appointment was made in Madras, and if it was no longer approved it could have easily been cancelled. I am in no way responsible for it one way or the other.

9. In the G. O. under notice, I am ordered to bring the Naidoo on the permanent establishment of the 8th Division "from 1st May 1872," and in a subsequent G. O. (8th August 1872, No. 1,869,) that date is altered to the 1st April 1872, but I shall refer to this matter in a separate communication.

10. In regard to paragraph 4 of the G. O. under notice, I shall take immediate steps to place myself in communication with Mr. Chisholm in regard to the plans and estimates required.

11. As regards the Napier Gate, the amount promised by the Nattoocottay Chetties for the same has not yet been placed at my disposal by the Collector, nor has it, I believe, yet been paid up by those gentlemen.

No. 382. ORDER THEREON, 26th September 1872, No. 2,286.

CIVIL WORKS, No. 21.

THE Superintending Engineer's letter shows clearly that there has been a misconception on his part as to the intentions of Government, and the Governor in Council therefore relieves him of all blame in the matter. He has already been furnished with a copy of Lord Napier's Minute, he will now be furnished with a copy of Mr. Chisholm's letter recorded in the same Proceedings of Government.

2. The last paragraph of the Superintending Engineer's letter shows more clearly than ever how necessary it is that works designed by the Consulting Architect should be estimated for and carried out under precisely the same conditions as any other public buildings, namely under the supervision of the Superintending Engineer with the official cognizance and concurrence of the Collector and Heads of other departments concerned. Great confusion arose from disregard of the ordinary course of business in the construction of the Lawrence Asylum buildings at Ootacamund; and it was with a view to obviate similar confusion with reference to the Palace at Madura that the G. O. under reference was issued.

3. Separate orders will be passed on the subject of Overseer Soobroyaloo Naidoo.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 383. Read the following letter from the Officiating Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Camp at Corayaur, 18th September 1872, No. 458 :—

WITH reference to paragraph 5 of G. O., No. 3,094, dated 7th December 1871, I have the honour to report that Mr. Sub-Engineer Hall has been in charge

of No. 4 Range, Tanore, since he joined this division, and that he has hitherto conducted the duties of the range satisfactorily.

No. 384. ORDER THEREON, 27th September 1872, No. 2,287.

ESTABLISHMENT, No. 27.

ORDERED to be recorded.

2. The further report called for at the expiration of twelve months will be submitted in due course.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following letters :—

No. 385. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 2nd September 1872, No. 2,424.

WITH reference to your memorandum, No. 165, dated 16th August 1872, I have the honour to inform you that the sum of Rupees 1,709-2-0, being the amount of the bill for expenses incurred in pulling punkahs from April to July inclusive, has been paid to Mr. R. Orr.

2. As Mr. R. Orr has already ceased to work, and is unwilling to undertake again the pulling of the punkahs at the General Hospital, I have arranged to purchase the engine, etc., at a cost of Rupees 3,000, and I have accordingly instructed the Executive Engineer, Presidency, to disburse the above sum to Mr. Orr.

3. The punkahs have been worked departmentally since 22nd August 1872, on which date they were handed over to this department.

4. The plan and estimate called for will be submitted when ready.

No. 386. From the General Superintendent of Public Works Stores and Workshops, to the Secretary to Government, Public Works Department, dated Chepauk, 11th September 1872, No. 571.

IN reply to your memorandum, No. 65, dated 9th September 1872, I have the honour to state that Rupees 3,000 can be spared from the Imperial grant under Tools and Plant for the Public Works Stores.

No. 387. ORDER THEREON, 27th September 1872, No. 2,288.

ACCOUNT, No. 39.

THE cost* of the engine and machinery purchased from Mr. Orr will be defrayed from the allotment at the disposal of the Officer in charge of the Public Works Store Department for Tools and Plant.

* Rupees 3,000.

2. Further orders will be passed on receipt of plan and estimate for a detached shed from which to work the machinery.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 388. Read the following Endorsement of the Consulting Engineer for Railways, dated Madras, 9th August 1872, No. 418 :—

MADRAS RAILWAY.

Minutes of a Meeting held at the Agent and Manager's Office, Royapoorum Terminus on Tuesday the 6th August 1872.

PRESENT :

Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways.

Captain R. THOMPSON, R.E., Officiating Deputy do. do.
Lieutenant C. H. P. CHRISTIE, R.E., Assistant do. do.
Captain C. M. MOBERLY, Examiner of Railway Accounts.
Mr. B. ANDERSON, Chief Engineer, Madras Railway.
" W. B. WRIGHT, Locomotive Superintendent, Madras Railway.
" H. E. CHURCH, Traffic Manager, Madras Railway.
" F. CHURCH, Chief Auditor, do.
" J. CRAMP, Chief Accountant, do.
" R. B. ELWIN, Agent and Manager, do.

THE under-mentioned applications for advances and payments on account of "Capital" and "Revenue," submitted by the Chief Auditor, were passed :—

MADRAS RAILWAY—CAPITAL.

		RS.	A.	P.
Locomotive Muster Roll	May 1872	6,707	2	3
Construction and Maintenance as per statement ...	" "	84,064	3	11
Salaries—				
Salt Cotaur, Madras Central Station and Perambore Works	June 1872	735	4	1
Districts I. and II., Neilgherry Branch	" "	2,027	9	7
Third Division, North-West Line	" "	1,542	5	2
Contingencies—				
General Management	" "	55	11	0
Abstract of Stores purchased	July "	45,514	15	8
Total...		1,40,647	3	8

MADRAS RAILWAY—REVENUE.

		RS.	A.	P.
Locomotive Muster Roll	May 1872	34,823	1	10
Construction and Maintenance as per statement	" "	43,562	9	4
Salaries—				
General Management...	June "	16,741	13	11
Police and Telegraph Departments	" "	5,948	12	4
General Superintendence	" "	7,139	11	1
Traffic Department	" "	33,742	6	2
Locomotive do.	" "	13,589	14	10
Salt Cotaur, Madras Central Station, and Perambore Works	" "	205	1	11
Madras Division	" "	1,490	8	9

		RS. A. P.
Salaries—		
Second Division, South-West Line	June 1872	1,610 14 8
Third do., do.	,, ,,	1,552 10 2
Fourth do., do.	,, ,,	1,538 14 4
First do., North-West Line	,, ,,	1,378 14 6
Second do., do.	,, ,,	1,285 14 6
Cheyaur Bridge, Suspense Account, Revenue ...	,, ,,	1,223 11 8
Contingencies—		
General Management	,, ,,	38,481 7 9
Traffic Department	,, ,,	230 7 0
	Total...	2,04,546 14 9

2. An application for the following cash advances for the month of August 1872 was submitted to the Consulting Engineer with the Agent and Manager's letter, No. 547, dated the 2nd August 1872.

——	Capital.	Revenue.
	Cr. RS. A. P.	*Dr.* RS. A. P.
Balance on 1st July 1872	2,10,456 10 9	14,521 2 2
Amount received in—		
From Government	50,000 0 0	1,75,000 0 0
Do. other sources	12,155 13 11	....
Total...	2,72,612 8 8	1,60,478 13 10
Expenditure in July 1872	1,58,524 2 7	1,79,356 14 5
	Cr.	*Dr.*
Balance on 1st August 1872	1,14,088 6 1	18,878 0 7
Estimated expenditure in August 1872...	1,41,700 0 0	1,81,600 0 0

3. It is requested that credit may be afforded on the Bank of Madras as follows, namely:—

Capital.	Revenue.	Total.
RS. A. P.	RS. A. P.	RS. A. P.
2,00,000 0 0	2,10,000 0 0	4,10,000 0 0

4. With reference to minute No. 7 of the meeting held on the 8th ultimo, the Agent and Manager submitted lists of the establishments required for the several departments for the half-year ending the 31st of December 1872. The following lists were approved by the Consulting Engineer and passed, namely:—

The Agent and Manager's.
The Chief Auditor's.
The Chief Accountant's.
The Cashier's.
The General Stores Department.
The Chief Engineer's.
The Consulting Physician's.

The lists of the proposed establishments for the Locomotive and Traffic Departments required revision, and when this is done the whole of the lists will be forwarded by the Agent and Manager to the Consulting Engineer for submission to Government.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

(Signed) R. B. ELWIN,
Agent and Manager, M. R.

SUBMITTED for the approval of Government.

(Signed) J. H. M. SHAW-STEWART, Lieut.-Colonel, R.E.,
Consulting Engineer for Railways.

No. 389. ORDER THEREON, 27th September 1872, No. 2,289.

RAILWAY, No. 76.

APPROVED.

2. The Establishment Lists referred to in Minute 4 have since been received and are now under consideration.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Read the following letters :—

No. 389A. From the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 13th August 1872, No. 426.

IN their Order dated the 2nd August 1872, No. 1,826, the Governor in Council expressed a hope that, on further reflection, the Agent of the Madras Railway would perceive that he was not justified in addressing the Consulting Engineer in the terms used by him in his letter dated the 1st July 1872. A copy of the order in question was communicated to the Agent, and I have now the honour to enclose a letter from Mr. Elwin, in which he writes as follows :—

"Having learnt from your communication to the Government that your letter to them, No. 235, dated 11th of May 1872, was not intended to contain any insinuation, just or unjust, against any of the 'Railway officers,' and that nothing was further from your intention than to make any insinuation against any officer of the Company, or to bring against any one a charge of want of good faith, I beg to express my regret that I should have misinterpreted your meaning and in consequence addressed to you my letter of the 1st ultimo, No. 456."

The Agent here treats my letter to Government as an explanation offered to himself, and upon the strength of it makes a conditional expression of regret for his previous letter. I submit that such a sequel to the letter I received from him is by no means satisfactory to me.

2. In the discharge of my duty I addressed to the Government a letter dated the 11th May 1872, in which I was constrained to notice some irregularities on the part of the Madras Railway officials. With reference thereto the Agent of the Madras Railway thought fit, on the 1st July 1872, to address me in a letter which I had the honour of laying before Government on the 4th idem, and to the language contained in which it is unnecessary for me to allude again. With regard to these two letters I maintain—

(1.) That I should have failed in my duty if in my letter, dated the 11th May, I had neglected to notice the irregular action of the Railway authorities;

(2.) That the wording of paragraph 4 of that letter was plain and simple, and should not have been misinterpreted;

(3.) That if the Agent did misinterpret it, I cannot be held in any way responsible;

(4.) That no possible misinterpretation could in any degree justify the Agent in using the language contained in his letter dated the 1st July.

I most respectfully solicit an expression of opinion by the Government upon these four points. With all deference I submit that the absence of any such expression of opinion in their Order dated the 2nd instant must inevitably lead the Railway authorities to suppose that the Government consider me to have been, to some extent at least, in the wrong.

3. In all parts of India the duties of the Consulting Engineers are of a delicate nature, and at times the proper discharge of those duties is attended with considerable difficulty; but that difficulty is greatly increased under the special circumstances of this Presidency. In other places the Consulting Engineer is, I have reason to believe, Joint-Secretary to Government; he has free and unreserved communication at all times with the members of the Government; and he enjoys the very great advantage of personal consultation with them in every difficulty. In Madras this is not the case. The Consulting Engineer is the responsible and confidential adviser of Government upon all questions connected with the Railway system of the Presidency; but he has no direct official communication with the members of the Government; and he does not enjoy the great advantage of personal consultation with them at all times. The Railway authorities have not failed to notice the isolated position which in this Presidency is occupied by the Consulting Engineer; and during the last two or three years there has been a growing tendency on their part to regard the Consulting Engineer as altogether distinct from the Government, to ignore his separate position and authority, and to appeal beyond him on every possible occasion. I respectfully maintain that the circumstances of my position, peculiar to this Presidency, entitle me to the special support of Government, more particularly in the case of an attack upon me so unjustifiable as is contained in Mr. Elwin's letter of the 1st July. Had I occupied the

position which is held by Consulting Engineers in other parts of India, I submit that Mr. Elwin would never have ventured to address me in the language contained in that letter.

4. I trust that I shall be pardoned if it seem to the Government that any of these remarks are uncalled for, or that in making them I have in any way overstepped the limits of my duty. As a matter of necessity the questions at issue are of the keenest interest to me. Putting the purely personal element quite out of consideration, I feel that I should be wanting in proper respect to the official position which I hold, and to the very important interests intrusted to my control, if I failed to bring to notice circumstances which, in my opinion, detract from the usefulness of that control, and impede me in the due discharge of my duties.

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 10th August 1872, No. 571.

In acknowledging the receipt of G. O., No. 1,826, dated the 2nd instant, I have the honour to inform you that having learnt from your communication* to the Government that your letter to them, No. 255, dated the 11th of May 1872, was not intended "to contain any insinuation, just or unjust, against any of the Railway officers," and that nothing was further from your intention than to make any insinuation against any officer of the Company, or to bring against any one a charge of want of good faith, I beg to express my regret that I should have misinterpreted your meaning and in consequence addressed to you my letter of the 1st ultimo, No. 456.

* No. 350, 4th July 1872.

2. I will ask you to be good enough to forward to the Government a copy of this communication with reference to their order.

No. 389B. From the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 16th August 1872, No. 430.

In further reference to my letter dated the 13th instant, No. 426, I have the honour to request that you will be so good as to lay before the Government the following extract from the last letter* addressed by the Agent of the Madras Railway to his Board, a copy of which reached me to-day.

* No. 1,014, dated 13th August 1872.

"From the tenor of Colonel Stewart's letter* to the Government he appears to have been under the impression that I questioned the right of the Consulting Engineer to criticise in the fullest manner the actions of the officers of the Company. Such however was not my intention. My letter† was intended to rebut in strong terms what both the Chief Engineer and myself regarded as an imputation of an attempt on our parts to hoodwink the Government, and although the Government has expressed no decided opinion on the subject I certainly think that, in the absence of the explanation which is now given, the passage from Colonel Stewart's letter which I have quoted above bore that interpretation."

* No. 350, 4th July 1872.
Vide G. O., No. 1,826, dated 2nd August 1872.

† No. 456, dated 1st July 1872.
Vide G. O., No. 1,826, dated 2nd August 1872.

2. As a comment upon the first part of this extract, I must ask the Government to read again the third paragraph of the Agent's letter to me, dated the 1st July 1872, which runs as follows :—

"The officers of this Company desire neither praise nor censure at your hands, all they desire being that their actions may be correctly represented by you to the Government. I hold that it is quite beyond your province to blame the officers of the Railway. It is for you to report to Government what transpires, leaving it to His Excellency in Council to impute blame or not, as they may think fit."

3. With reference to the latter portion of the extract from the Agent's letter to his Board, I solicit the special attention of Government to the remarks made by me in paragraph 2 of my letter, dated the 13th instant. I then pointed out that the absence of any expression of opinion by the Government in their order,* dated the 2nd instant, as to whether I had in any way given cause to the Agent to address me in the language employed by him, must inevitably lead the Railway authorities to suppose that the Government consider me to have been in the wrong. The Government will perceive that this has been the case; and that the Agent, in writing to his Board, has left them to conclude that, in the opinion of the Government, the letter† which I addressed to them on the 11th May 1872 might fairly be so interpreted as to justify the language which he employed in his letter of the 1st July 1872.

* No. 1,826.

† No. 235.—*Vide* G. O., No. 1,423, dated 8th June 1872.

4. I request that the closest scrutiny may be made into the words used by me in my letter of the 11th May; I maintain that they were plain and simple, and ought not to have been misinterpreted; but the main point upon which I respectfully request an expression of the opinion of Government is whether any possible misinterpretation of those words could justify the Agent in addressing to me his letter of the 1st July.

5. It is with extreme regret that I find myself obliged to trouble the Government again upon this painful subject. In dealing with this letter and with that which I addressed to you on the 13th instant, I beg that the Government will bear in mind that the circulation of the Agent's letter to his Board is not confined to India, but that it is seen by the Directors of the Company and by the India Office officials. Unless the Government consent to place upon record an expression of their opinion to the contrary, all who read the Agent's letter must inevitably come to the conclusion that, in the opinion of the Government, the words previously used by me in my official and confidential report might fairly be so interpreted as to justify Mr. Elwin's language.

No. 389c. From the same Officer, dated 13th September 1872, No. 494.

In the second paragraph of their Order dated the 2nd August 1872, No. 1,826, the Government stated that they would be reluctant to alter the present practice of communicating to the Railway authorities the observations made on their proceedings by the Consulting Engineer. I do not understand it to be the

intention of Government that the existing practice in this matter should be in any way disturbed, but in order that there may be no possible misapprehension I wish to state exactly what that practice is and has been in the case of the various Railway Companies in this Presidency.

2. A reference to the observations of the Consulting Engineer dated the 29th May 1856, No. 90, will show that the question was then raised as to whether the Agent of a Guaranteed Railway Company was entitled to demand copies of the reports submitted to Government by their Consulting Engineer. In laying the question before Government for orders, Colonel Pears observed that "the Government officer was responsible for the correctness of his report, but the order of Government passed thereon becomes the proper subject of the Agent's attention." Colonel Pears added, that he had no personal objection to the Agent seeing those reports, but that a formal application for them, unless required in elucidation of the Government order, appeared irregular.

3. In their Order dated the 11th June 1856, No. 178, the Governor in Council expressed his concurrence with Colonel Pears that the Railway authorities were not entitled to copies of reports made to Government by their Consulting Engineer; but that in the case then brought forward the Government would not object to the Agent being supplied, for communication to the Chief Engineer, with copies of certain reports.

4. In a subsequent letter dated the 15th October 1856, No. 199, Colonel Pears drew the attention of Government to the tendency on the part of the Railway authorities to draw a line between the Government and their Consulting Engineer, to ignore the personal authority of the latter officer, and to refuse to acknowledge "any authority but that as constituted by law and provided for in the contract, namely, the Governor in Council of Fort St. George." Colonel Pears pointed out that the Agent had overlooked clause 27 of the contract, which especially provides for the appointment of an officer to act on behalf of the East India Company, and to conduct the duties connected with the supervision and control of the proceedings of the Railway Company in India. Colonel Pears further stated that to leave the Agent under so serious a misapprehension regarding the relative positions of himself and the Government officer would probably give rise to embarrassment hereafter, and, with a view to remove any disposition on the part of the Agent to question orders emanating from the Consulting Engineer, he recommended "the adoption of a course slightly different from that hitherto pursued, namely, the conveying all instructions in one and the same form, *i. e.*, by letter; the Minutes of Consultation being recorded in this office, when received, as the authority for fresh instructions as may be framed upon them."

5. In their Order dated the 7th November 1856, No. 394,* the Government sanctioned the change of practice suggested by the Consulting Engineer, namely, that in place of copy of the extract from the Minutes of Consultation being furnished to the Agent, the instructions that it contains be conveyed to him by letter, the extract itself being recorded in the office of the Consulting Engineer, as his authority for the order given.

* *Vide* Railway Orders, Part I., page 50.

6. Ever since those orders were passed the communications of this office with the Agents of the three Railway Companies have been carried on in accordance with their spirit. For many years the orders were strictly and literally obeyed; all the Proceedings of Government which affected the different Companies were communicated to the Agents by letter, and, excepting in special cases, the reports submitted to Government by the Consulting Engineer were not furnished to them. But of late years the work of all kinds connected with Railways has increased so enormously that it has been practically impossible to communicate all orders in the shape of letters, and advantage has been taken of the Proceedings of Government being printed to supply copies to the Agents upon all ordinary subjects. It has, however, always been left to the discretion of the Consulting Engineer to furnish the Agents of the various Companies with the printed Proceed-

ings of Government, in which all other papers on the subject are generally embodied, or with the tenor only of the orders of Government in the shape of letters; and I presume that in their Order dated the 2nd ultimo, the Government had no intention of restricting the Consulting Engineer's discretionary power in this matter. It is clear that there is still the same tendency, as in Colonel Pears' time, to distinguish between the Government and the officer who has been appointed to represent them and to act on their behalf, and to ignore the personal authority of the Consulting Engineer.

7. I need not observe that there are many cases in which it would be highly inexpedient to furnish the Railway authorities with copies of all the confidential papers which pass between the Government and their Consulting Engineer, or between this Government and the Government of India, and while I am on every ground anxious that the Railway authorities should as far as possible have full knowledge of my own opinions and of the views of Government upon all questions, I trust that the Government will see fit to leave it, as it has hitherto been left, to their Consulting Engineer to communicate to the Railway authorities the Proceedings and Orders of this Government, or of the Government of India, either in the form in which they reach his office, or by letter, as may seem to him expedient.

No. 389D. ORDER THEREON, 27th September 1872, No. 2,289-A.

RAILWAY, No. 76-A.

THE Governor in Council while regretting that a more complete apology has not been made by the Agent of the Madras Railway Company for the language used by him in his letter of the 1st July 1872, No. 456, in reference to the Consulting Engineer for Railways, is not prepared to take any further action in regard to this correspondence. It is certain that the unjustifiable language used in the letter above mentioned by the Agent for the Madras Railway was used under a misapprehension of the meaning of the passage in Colonel Shaw-Stewart's letter to which it referred, and His Excellency in Council considers that the circumstances are not such as to require any expression of the opinion of the Government beyond that contained in the G. O. No. 1,826 of 2nd August 1872.

2. The Governor in Council concurs in the views expressed by the Consulting Engineer in his letter of the 13th instant, No. 494. It will as hitherto be discretionary with that Officer to furnish the Railway authorities with copies of the Proceedings of Government embodying his reports or letters, or merely to communicate to them by letter the purport of the orders of Government.

3. With reference to the remarks made towards the close of Lieutenant-Colonel Shaw-Stewart's letter of the 16th ultimo, No. 430, His Excellency in Council observes that while the Government do not deem it advisable to constitute the Consulting Engineer a Joint Secretary to Government they have every wish that he should regard himself as the confidential adviser of the Government, and that he should have free access to the Members of Government whenever he may desire to represent in person any difficulties or embarrassments he may experience in the discharge of his duties.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

GROUNDS OF PROPOSITION.

THE works entered as item 1 are represented to be necessary for sanitary purposes, and as the Government had no funds at their disposal under "Original Works," a transfer from "Repairs" was made.

2. The transfers entered as items 2 and 3 were made from the Budget grant for compensation to Medical and Military Subordinates on account of house-rent; the former is for the provision of house accommodation for two Medical Warrant Officers, and the latter for the construction of a new magazine for the stowage of snider ammunition at Cannanore.

Item 4.—The scarcity of drinking water is much felt throughout the year at the lines of the Native Troops stationed at Perambore, and it has accordingly been arranged with the Municipality to lay on water to both wings of the Regiment in pipes, with stand corks conveniently placed, so as to be available to the non-military public also, the Government paying a moiety of the cost.

Item 5.—This sum is required for the completion of the verandahs of the North and South Barracks at St. Thomas' Mount, and has been provided from the same source as items 2 and 3.

ACCOUNT, No. 40.

No. 2,290.

PUBLIC WORKS DEPARTMENT.

No. 390. *Application to the Government of India for a reappropriation of the Budget Grant, dated 27th September 1872.*

Proposed New Grant.					Proposed Reduction.		
No.	Head of Service.	Particulars.	Amount of Estimate.	Amount of proposed Grant.	Head of Service.	Item of Budget Estimate.	Amount.
			RS.	RS.			RS.
1	Military ...	Drainage works in the vicinity of the Barracks at Wellington, Neilgherries	860	860	Military	Repairs	860
2	Do. ...	Quarters for two Medical Warrant Officers on the ground-floor of the old East India Veteran Company Barracks at Vizagapatam	1,600	1,600	Do.	Do.	1,600
3	Do. ...	New Magazine for the stowage of snider ammunition for the European Infantry Regiment at Cannanore, Malabar	2,920	2,920	Do.	Do.	2,920
4	Do. ...	Laying on water in pipes to the lines of both wings of the Regiment at Perambore, Presidency ...	7,619	3,810	Do.	Renewal of the Bakery. Budget Item No. 12 ...	3,810
5	Do. ...	Re-constructing wooden verandahs in front of the North and South Barracks at St. Thomas' Mount, Chingleput. Budget Item No. 3	7,724	1,464	Do.	Repairs	1,464

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

GROUNDS OF PROPOSITION.

The sum of Rupees 20,000 appropriated from the allotment for the Streeviguntum Anicut Project was sanctioned by Government in part repayment of a sum of Rupees 38,840, which the ryots had contributed towards the work. The circumstances under which this payment has been made will be found reviewed in the accompanying G. O., No. 1,777, dated 26th July 1872.

ACCOUNT, No. 41.

No. 2,291.

PUBLIC WORKS DEPARTMENT.

CAPITAL.

No. 391. *Application to the Government of India for a reappropriation of the Budget Grant, dated 27th September 1872.*

Proposed New Grant.					Proposed Reduction.		
No.	Head of Service.	Particulars.	Amount of Estimate.	Amount of proposed Grant.	Head of Service.	Item of Budget Estimate.	Amount.
			RS.	RS.			RS.
1	Agricultural	Repairing the Tambrapocrney River Embankment from the anicut to the sea in the Tinnevelly District.	....	20,000	Agricultural	Streeviguntum Anicut Project. Budget Item No. 35, Extraordinary.	20,000

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

No. 392. Read the following letter from the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Courtallum, 2nd September 1872, No. 2,510:—

In reference to G. O., 1st July 1872, No. 1,586, and the distribution of Range Establishments forwarded therewith, and to G. O., 5th July, No. 1,630, stating that the existing Range Establishments will be considerably and permanently diminished on the introduction of the District Engineer system on the 1st October next, as also to G. O., 1st August 1872, No. 1,821, dividing the Tinnevelly District into three ranges, and notifying the scale of Office Establishment thereof, I think it only my duty to remark that if the existing Range Establishments be diminished in the manner contemplated for the two districts forming this division, it will be simply impossible for Range Officers to carry on the very heavy duties now imposed upon them.

2. The doubling up of several ranges and the submission of only one set of accounts to the Controller permits, without doubt, a reduction of Office Establishment, but it has to be borne in mind that establishments which in 1865 were considered sufficient for the conduct of duties then imposed upon Range Officers, are totally inadequate at the present day, because the accounts and returns demanded have increased to so great an extent. And it is manifest that a reduction of establishment which could have been effected in 1865, by doubling up ranges, is no longer feasible.

3. It is to be remembered too that by doubling up ranges the extent of country to be visited and the number of works inspected and their attendant accounts to be prepared is in no measure diminished, and if, as it is found in this division, where the doubling up of ranges is carried out to the fullest extent possible, the existing establishment is insufficient for the duties entailed upon it, it is difficult to understand how these duties can be efficiently performed if, as stated, these establishments are to be considerably and permanently reduced.

4. The present strength of the establishment of the 8th Division is as follows:—

	RS.
Madura	403
Tinnevelly	635

The proposed establishment, according to G. O., 1st July 1872, No. 1,586, is

	RS.
For Madura	384
Tinnevelly	506

In G. O., 12th August 1872, No. 1,908, the establishment is given as below,

	RS.
Madura	384
Tinnevelly	555

Showing a decrease, as finally determined upon,

For Madura	19
Tinnevelly	80

5. I have no hesitation whatever in stating that, with the establishments as now laid down, it will be quite impossible for Range Officers to conduct their current duties efficiently, unless some special arrangement is made for the petty establishments required by Sub-division Officers.

6. If this point, however, be conceded, the establishments as now sanctioned will suffice. The petty establishment to which I refer as being necessary for each Sub-division Officer is—

	RS.
1 Writer ...	25
3 Lascars, at 7 Rupees ...	21
Total...	46

and of these there will be required for

Madura 1 ...	46
Tinnevelly 4 ...	184
	230

7. It will be thus seen that with the arrangement proposed in G. O., 1st July 1872, No. 1,586, and the petty establishment above detailed, the total cost of establishment for the division amounts to Rupees 1,120, or Rupees 82 in excess of the present establishment.

8. A saving, however, could well be effected by forming the present Northern Range into a 1st class Range with an establishment of Rupees 171, instead of a special range at Rupees 213, as proposed in G. O., 1st July 1872, No. 1,586. The increase over the present establishment sanctioned for the division would thus be reduced to only Rupees 40.

9. I feel satisfied that it is vain to hope that below the figures recommended in this letter, the duties of Range Officers can be efficiently conducted; and, as already stated, I think it my duty therefore to bring the matter to the prominent notice of Government.

No. 393. ORDER THEREON, 30th September 1872, No. 2,292.

ESTABLISHMENT, No. 28.

THE Superintending Engineer of the 8th Division is informed that the Establishment to be allowed to Sub-divisional Officers when the re-organization of the Public Works Department is carried into effect on the 1st December (two months later than originally intended) consists of

	RS.
1 Writer on ...	25
2 Lascars on ...	14
Total...	39

His next Quarterly Statement of Officers and Subordinates should show very clearly the distribution of their charges.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 394. Read the following letter from the Superintending Engineer, 1st Division, and from the Acting Sub-Collector, Godavery District, to the Secretary to Government, Public Works Department, dated Rajahmundry, 13th September 1872:—

WE have the honour to inform you that we have this day examined Mr. Walch in conversation in the Telugu language, and consider him fully entitled to pass the colloquial test.

2. We enclose copy of a letter from the Collector appointing the Sub-Collector to examine.

No. 395. ORDER THEREON, 30th September 1872, No. 2,293.

ESTABLISHMENT, No. 29.

COMMUNICATED to the Controller of Public Works Accounts.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 396. Read the following Endorsement of the Acting Deputy Consulting Engineer for Railways, dated Madras, 19th September 1872, No. 501 :—

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 18th September 1872, No. 680.

I HAVE the honour to enclose, for your information, copy of a letter from the Chief Auditor, No. 720, of the 17th instant, in which he alludes to the disorganized state of his department owing to the prevailing epidemic "dengue."

2. Mr. Church, you will observe, expresses his great regret that the work of his office should be so much in arrear, but the difficulties which you have had to contend with in your own office from the same cause, will, I trust, enable you to make the necessary representations to the Government, as explanatory of the delay in the submission of returns, etc., etc.

3. The statements of audited traffic for the period ended the 3rd of August, referred to by Mr. Church, were forwarded to your office yesterday.

From the Chief Auditor, to the Agent and Manager of the Madras Railway Company, dated Madras, 17th September 1872, No. 720.

IN forwarding the audited traffic statements for the period ended 3rd August, I have to express very great regret that we are so far behind hand, and to state that it will become necessary to fall still further into arrears in order to get out the half-yearly statistics.

2. For a period of about six weeks there have been on an average twenty men absent out of my establishment sick with dengue, and I am sorry to have to report that the absentees have increased in number in the last two days to thirty.

3. The pressure on my office is so great, notwithstanding the men attend early and late, that I am bound to press two of the Travelling Auditors into our establishment at head-quarters, and to bring a writer into it from the store audit. In this way I hope to reduce the inconvenience to a minimum, but with so large a per-centage of Clerks absent from their duties it is of course quite impossible to furnish returns for which we are very hard pressed even when working at our full strength.

SUBMITTED to Government with reference to this office letter No. 467, dated 3rd September 1872.

2. The audited traffic statement for the period ended 3rd August 1872, referred to in the Chief Auditor's letter, was submitted to Government yesterday.

(Signed) C. H. P. CHRISTIE, Lieutenant, R.E.,
Ag. Dy. Consg. Engr. for Railways.

No. 397. ORDER THEREON, 30th September 1872, No. 2,294.

RAILWAY, No. 77.

ORDERED to be recorded.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 398. Read the following letter from the Under Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, (Railway,) dated Simla, 13th September 1872, No. 1,477-G. R :—

I AM directed to acknowledge the receipt of your letter No. 2,020, dated the 24th August 1872, forwarding papers relating to the experiment made for cooling carriages on the Madras Railway, and with reference to paragraph 3 of the Agent's letter to request that you will furnish details showing in what manner the kuss-kuss taties were applied to the carriages.

No. 399. ORDER THEREON, 30th September 1872, No. 2,295.

RAILWAY, No. 78.

COMMUNICATED to the Consulting Engineer for Railways, with reference to G. O., No. 2,019, dated 24th August 1872, and with a view to the required information being furnished.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 400. Read the following letter from the Under Secretary to the Government of India, Public Works Department, (Railway,) to the Secretary to the Government of Madras, Public Works Department, (Railway,) dated Simla, 14th September 1872, No. 1,483-G. R :—

I AM directed to acknowledge the receipt of your letter No. 2,005, dated the 22nd August 1872, with enclosure, requesting instructions as to the incidence of cost for replacing by a permanent structure the temporary station at Veerunjee-

poorum on the South-West Line of the Madras Railway, and in reply to convey the sanction of the Government of India to the proposal of the Agent to charge to Capital Rupees 1,378, the difference between the total amount of the estimate Rupees 2,719 and the cost of the original building, which was Rupees 1,341.

2. This sanction has been entered in the Register of this office as No. 53 M. R. of 1872-73.

No. 401. ORDER THEREON, 30th September 1872, No. 2,296.

RAILWAY, No. 79.

COMMUNICATED to the Consulting Engineer for Railways, with reference to G. O., No. 2,004, dated 22nd August 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 402. Read the following letter from the Under Secretary to the Chief Commissioner of Mysore, Public Works Department, Irrigation Branch, to the Secretary to the Government of Madras, Public Works Department, dated Bangalore, 4th September 1872, No. 216/2,391 :—

WITH reference to your No. 1,158, dated 6th May 1872, stating that the Madras Government had no objection to the employment of Serjeant Heinig for six months from 5th January 1872, I have the honour, by desire of the Chief Commissioner, to inform you that the Governor-General in Council has approved of an application being made to the Government of Madras for the transfer of the Serjeant permanently to the Public Works Department in Mysore, and to request, should no objections exist, that the requisite transfer may be made.

No. 403. ORDER THEREON, 30th September 1872, No. 2,297.

ESTABLISHMENT, No. 30.

RESOLVED that the Mysore Government be informed that there is no objection in this department to the permanent transfer of Serjeant Heinig to the Public Works Department in Mysore.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 404. From the Secretary to the Government of Fort Saint George, Public Works Department, to the Chief Commissioner of Mysofe, dated 30th September 1872, No. 2,298.

ESTABLISHMENT, No. 31.

SIR,—In reply to your letter of the 4th instant, No. 216/2,391, I am directed to state that there is no objec-

tion in this department to the permanent transfer of Serjeant Heinig to the Public Works Department in Mysore.

No. 405. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 13th September 1872, No. 491 :—

In reply to the Order of Government dated the 8th August 1872, No. 1,872, I have the honour to report that the Agent of the Madras Railway Company states that he is unable to forward the approximate weekly statements earlier than the thirteenth day from the close of the periods to which they relate. They are generally received in this office on the fourteenth day.

2. From the Carnatic Railway Company these statements are almost invariably received in this office within the seventh day from the close of the periods to which they relate.

3. From the Great Southern of India Railway Company no approximate statements are now received. The audited statements are generally despatched by the Agent on the seventh day, and received in this office on the ninth day, from the close of the periods to which they relate; and, as the Agent states, approximate returns could not be rendered sooner.

4. A delay of several days in the receipt of these statements by the Government of India might be avoided if they were sent direct to that Government from this office, and I have the honour to suggest that course for consideration.

No. 406. Order thereon, 30th September 1872, No. 2,299.

RAILWAY, No. 80.

Ordered that this letter be forwarded to the Government of India with an expression of the concurrence of His Excellency the Governor in Council in the Consulting Engineer's proposal to forward the approximate Traffic Returns direct to the Government of India in future instead of through the Government Office. This course will no doubt aid the attainment of the object in view, namely, promptitude in the publication of the results from all Railways in the *Gazette of India*.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,

Secretary to Government.

No. 407. (Docket No. 2,300, dated 30th September 1872.)

Copy of the above forwarded to the Government of India.

(Signed) G. W. WALKER Colonel R.E.,

Secretary to Government.

No. 408. Read the following docket from the Government of India, Public Works Department, dated Simla, 9th September 1872, No. 266 A. I. :—

COPY of the following Resolution forwarded to the Secretary to the Government of Madras, Public Works Department, Irrigation Branch, for information in continuation of Public Works Department Resolution No. 200 A. I., dated 5th July 1872, with the remark that application may be made, if necessary, for an additional grant to the extent of the probable deficit framed in the Budget later in the year.

(By Order.)

(Signed) P. O'CONNELL, Lieut.-Colonel, R.E.,
Officiating Deputy Secy. to the Govt. of India.

No. 2,283.

GOVERNMENT OF INDIA.

FINANCIAL DEPARTMENT.

Simla, 24th August 1872.

Read a communication from the Public Works Department, No. 199 A. I., dated the 5th July, on the subject of the deficit in the revenue of the Madras Irrigation and Canal Company for 1872-73.

2. In reviewing the Madras Irrigation Budget Estimate for 1872-73, the Government of India in the Public Works Department directed that the deficit of Rupees 50,305-7-3 should be made good from the Ordinary Agricultural grant to the Madras Presidency.

3. The Government of Madras remonstrates against these orders, and urges that the Irrigation project should be looked upon as Imperial, and any deficit in revenue, like a deficit in interest on capital, made good by a special grant.

4. The Public Works Department are disposed to agree with the Madras Government in thinking that the entire burden of the deficit should not be thrown upon that Government; but, as the matter has been referred to the Secretary of State, that department suggests that the Government of Madras be informed in the meantime that if it is finally decided to meet the charge from the ordinary grant for Agricultural works, the Government of India will be prepared to make an additional allotment for the purpose later in the year, when the necessity for such an allotment shall have been shown.

5. The Governor-General in Council in this department considers the claim of the Madras Government equitable, and has, therefore, no objection to the proposed reply.

ORDER.—Ordered that a copy of the above be forwarded to the Public Works Department for information and further orders.

(Signed) D. BARBOUR,
Officiating Under Secy. to the Govt. of India.

No. 409. ORDER THEREON, 30th September 1872, No. 2,301.

IRRIGATION, No. 18.

25th July 1872, No. 1,764.
30th Aug. „ „ 2,073.

COMMUNICATED to the Chief Engineer for Irrigation, the Superintending Engineer of the 4th Division, and the Controller of Public Works Accounts, in continuation of the orders marginally noted.

2. Colonel Moberly will report specially after receipt of the Range Progress Reports for the current month how far it is likely that the large grant for Agricultural Repairs in the North Arcot District will be utilized within the current official year.

(Signed) G. W. WALKER, Colonel, R. E.,
Secretary to Government.